

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

CALLAWAY GOLF COMPANY,	)	
	)	
Plaintiff,	)	C.A. No. 06-91 (SLR)
v.	)	
	)	
ACUSHNET COMPANY,	)	<b>JURY TRIAL DEMANDED</b>
	)	
Defendant.	)	

**ACUSHNET COMPANY'S REPLY BRIEF IN SUPPORT OF ITS MOTION TO  
CERTIFY UNDER 28 U.S.C. § 1292(b) THE COURTS ORDER REGARDING  
STAYING LITIGATION PENDING *INTER PARTES* REEXAMINATION**

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## I. INTRODUCTION

Callaway's opposition misconstrues the controlling question of law presented by Acushnet's motion as a review of discretion. Acushnet does not seek a review of the Court's application of its discretion, but instead seeks review of the legal framework that guides that discretion: *i.e.*, under what circumstances should a court normally have discretion to deny a stay at all when there is a first-filed *inter partes* reexamination? That question is one that has an impact well beyond this litigation, and is appropriate for interlocutory review.

Callaway does not seriously contest that there are substantial grounds for disagreement in this case. There are substantial grounds for disagreement because no case has ever dealt with the issue of whether a first-filed *inter partes* reexamination request should normally require the stay of a subsequently-filed litigation. Moreover, all of the cases that have dealt with a second-filed *inter partes* reexamination have stayed the litigation. Callaway does not dispute these facts, but instead argues against a straw man argument that Acushnet does not make.

Finally, Callaway's opposition ignores the relevant inquiry necessary for the third prong of the test under 28 U.S.C. § 1292(b). Callaway argues that just because trial may occur sooner if no appeal is taken, the appeal cannot materially advance the litigation. That is too narrow a view of what it means to materially advance the litigation. An appeal, and a subsequent stay of these proceedings while the reexamination proceeds, would have the effect of significantly simplifying and eliminating the issues before this Court. In particular, the reexamination will resolve the validity issues on the patents-in-suit, regardless of how the reexamination is resolved. Callaway's opposition continues to ignore the fact that, unlike an *ex parte* reexamination, an *inter partes* reexamination result will be binding on both parties.

## II. ARGUMENT

### A. This Case Presents a Controlling Question of Law

Callaway's primary argument in its opposition is that Acushnet has failed to identify a controlling question of law that would be appropriate for interlocutory review under § 1292(b). But in doing so, Callaway recognizes that the controlling question of law Acushnet's motion presents is a "request for guidance," or a policy question, regarding how district courts should exercise their discretion. [D.I. 70 at 3.] This question is not, as Callaway tries to characterize it, a review of the Court's application of its discretion to the facts of this case, but instead a review of the legal question of whether the Court's discretion should be limited or sharply narrowed when there is a first-filed *inter partes* reexamination.

#### 1. **Acushnet does not seek certification of a discretionary ruling, but instead of whether the Court's discretion should be narrowed when there is a first-filed *inter partes* reexamination.**

Callaway devotes much of its brief to argue that Acushnet does not present a controlling question of law because the Court used its discretion to deny Acushnet's stay request. Callaway's argument misses the point of Acushnet's motion for certification. Acushnet does not seek certification of how the Court applied its discretion to these facts. Instead, Acushnet seeks certification of the question of whether the Court's discretion should be narrowed in circumstances such as these, when there is a first-filed *inter partes* reexamination underway.

Callaway relies on several cases for the general proposition that discretionary decisions of a trial court do not present a controlling question of law appropriate for interlocutory appeal. [D.I. 70 at 3-7]. None of the movants in those cases, however, presented as the controlling question of law how such discretion should be limited in certain circumstances. Instead, each of these cases dealt with the question of whether the court abused its discretion as applied to particular facts. *Convolve, Inc. v. Compaq*

*Computer Corp.*, 2006 WL 2788234 at \*2 (S.D.N.Y. Sept. 27, 2006) (scope of attorney-client waiver); *In re Kester*, 2006 WL 2540393 at \*1 (D. Kan. Jan. 13, 2006) (whether to grant a continuance); *Texaco, Inc. v. Duhe*, 44 F. Supp. 2d 809, 813 (W.D. La. 1998) (whether to abstain in favor of pending state court proceedings); *Schine v. Schine*, 367 F.2d 685, 688 (2d Cir. 1966) (whether to grant or deny a motion for separate trial); *Barnes v. Am. Tobacco Co.*, 176 F.R.D. 479, 495-96 (E.D. Pa. 1997) (whether to grant or deny class certification); *In re Orthopedic Bone Screw Prods. Liab. Litig.*, 1996 WL 557334 at \*3 (E.D. Pa. Sept. 30, 1996) (whether to allow plaintiff to dismiss without prejudice and refile).

These cases follow the generally-accepted rule that if the question is whether the court correctly applied its discretion to the particular facts at issue, such a factually-intensive inquiry is not a controlling question of law. In such cases, the movant is really just trying to certify disagreements with the court's exercise of its discretion, and "such disagreements do not constitute controlling issues of law under § 1292(b)." *Barnes*, 176 F.R.D. at 496.

In the present case, unlike the cases cited by Callaway, Acushnet urges the Court to certify the question of whether the Court's discretion to deny a motion to stay should be sharply narrowed when the reexamination request is first-filed and *inter partes*. As such, the cases cited by Callaway are inapposite to whether such an issue is a controlling question of law.

The mere fact that the Court used its discretion to deny Acushnet's motion for a stay does not preclude interlocutory appeal. Indeed, the Third Circuit admonished in the *Katz* case that a strict rule that discretionary rulings may not be subject to interlocutory appeal is contrary to the legislative intent behind § 1292(b):

The key consideration is not whether the order involves the exercise of discretion, but whether it truly implicates the policies favoring interlocutory appeal. The determination of what orders are properly reviewable under § 1292(b) must be made by a practical application of



those policies, not by a mechanical application of labels such as 'discretionary' or 'nondiscretionary.' Those policies, both before and since the enactment of § 1292(b) have included the avoidance of harm to a party pendente lite from a possibly erroneous interlocutory order and the avoidance of possibly wasted trial time and litigation expense.

*Katz v. Carte Blanche Corp.*, 496 F.2d 747, 755-56, 756 (3d Cir. 1974) (emphasis added).

Callaway tries to downplay this guidance by arguing that the examples provided in the *Katz* case are not factually similar to the present case. [D.I. 70 at 6.] However, the guidance provided by the Third Circuit is directly on point. Applying *Katz*, it does not follow that the denial of Acushnet's motion to stay cannot be subject to interlocutory appeal just because it was made at the Court's discretion. The Court should look beyond the label of "discretionary" and examine whether the policies behind interlocutory appeals are furthered by certifying the question that Acushnet proposes. For the reasons set forth herein, the question of whether a district court's discretion should be limited in the circumstances here is an important controlling question of law that is appropriate for interlocutory review.

Put another way, Acushnet does not request review of the application of the Court's discretion, but instead seeks review of the circumstances under which such discretion should be narrowed. This is an appropriate matter for interlocutory review. ***"[T]he questions of law that guide the exercise of discretion are as suitable for interlocutory review as any other questions of law."*** 16 Charles A. Wright, Arthur R. Miller & Edward H. Cooper, *Federal Practice and Procedure: Jurisdiction* 2d § 3930 at 431-32 (1996) (citing *In re Virginia Elec. & Power Co.*, 539 F.2d 357, 363-64 (4th Cir. 1976)) (emphasis added). The controlling question of law in this case is just that: a question of law that guides the exercise of discretion.

Indeed, courts have found many circumstances in which interlocutory appeal of a discretionary ruling is appropriate. *See, e.g., Haas v. Pittsburgh Nat. Bank*, 627 F.2d 677, 680 (3d Cir. 1980) (discretionary recusal of the trial judge is properly reviewed for abuse of discretion under § 1292(b)); *McClelland Engrs., Inc. v. Munusamy*, 784 F.2d 1313,

1316 n. 1 (5th Cir. 1986) (discretionary refusal to dismiss on forum *non conveniens* grounds is appropriate for interlocutory appeal); *Lear Siegler, Inc. v. Adkins*, 330 F.2d 595, 598 (9th Cir. 1964) (controlling question of law was whether the trial court abused its discretion in granting a stay).

**2. Whether a court's discretion to deny a stay should be narrowed where there is a first-filed *inter partes* reexamination request is an important question that has a broad-ranging impact beyond this case.**

Callaway fails in its attempt to downplay the impact of the controlling question of law presented by this case. [D.I. 70 at 8.] Callaway improperly attempts to limit the impact of an appeal in this case to the facts of the instant case alone. However, since the controlling question of law is whether a court's discretion to deny a motion to stay should be narrowed where there is a first-filed *inter partes* reexamination, rather than a review of how this Court applied its discretion, the question has much broader impact than this case alone.

If a first-filed *inter partes* reexamination request will normally have the effect of staying any subsequently-filed litigation, as Acushnet urges, this will motivate parties to choose the forum of the PTO to litigate the validity of patents, rather than being forced to litigate in Federal courts. This will give effect to the Congressional purpose of enacting the *inter partes* reexamination procedure, which is to "reduce expensive patent litigation." 145 Cong. Rec. S14696-03 (Nov. 17, 1999).

A Federal Circuit ruling in favor of Acushnet will change the calculus for any would-be patent defendant. Instead of having the Hobson's choice of filing a declaratory judgment action or waiting to be sued in Federal court, the option of filing for an *inter partes* reexamination would now be viewed as a serious alternative to litigate the validity of patents without incurring the substantial and sometimes prohibitive costs of litigation, just as Congress intended.

Indeed, Callaway's arguments against staying the litigation in this case would apply to virtually every case where there was a first-filed *inter partes* reexamination, and would completely subvert the intended effect of Congress in enacting *inter partes* reexamination proceedings. For example, Callaway argues that *inter partes* reexaminations take a long time, even longer than *ex parte* reexaminations [D.I. 70 at 15-17]; this argument would apply to every case involving an *inter partes* reexamination. Callaway also argues that not all the issues in this litigation will be resolved by the *inter partes* reexamination [D.I. 70 at 13-14]; again, this argument would apply to virtually every case. Callaway further argues that a trial court determination that the patents are valid would render the reexamination moot [D.I. 70 at 14]; this argument also applies to every case involving a related *inter partes* reexamination. Indeed, if this case is not one in which a stay should be granted, virtually no case involving an *inter partes* reexamination should be stayed.<sup>1</sup>

Thus, Callaway essentially argues for a bright-line rule that litigation normally should not be stayed in light of a first-filed *inter partes* reexamination request. In fact, if Callaway's arguments are accepted, the court would be more likely to stay a litigation when there is an *ex parte* reexamination than when there is an *inter partes* reexamination. This would have the inverse effect of that intended by Congress. Accepting Callaway's arguments would mean that the use of *inter partes* reexamination proceedings would increase patent litigation on the whole, which is inconsistent with the Congressional goal of reducing patent litigation. 145 Cong. Rec. S14696-03 (Nov. 17, 1999).

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<sup>1</sup> If there is any case in which a stay would be appropriate, it would be this case, where a) the reexamination request was filed before the litigation; b) the reexamination request is *inter partes*; c) the primary issue in the litigation will be the invalidity of the patents-in-suit; d) the motion for stay was filed very early in the litigation before substantial discovery had commenced; and e) the litigation does not involve substantial issues that are not related to the patents-in-suit. Thus, if Callaway is correct in its arguments that this case should not be stayed, it would be hard to imagine a case that should be stayed.

Accordingly, the question presented by this motion has a much broader impact than just this case. It is a question that would help define the role of the relatively new *inter partes* reexamination procedure as it relates to patent litigation for all potential patent litigants. This is similar to the Federal Circuit's reasoning in the *Symbol* case, involving the application of laches to prosecution history, in which the Federal Circuit based its certification "in part because the issue affects not only this case, but many other cases as well." *Symbol Techs., Inc. v. Lemelson Med., Educ. & Research Found. L.P.*, 56 U.S.P.Q. 2d 1381, 1382 (Fed. Cir. 2000). As set forth in Acushnet's opening brief on this motion, such questions that have a broad impact are particularly appropriate for interlocutory review under § 1292(b). [D.I. 66 at 12-13.]

**3. Whether or not the Federal Circuit would accept the certification is not the appropriate inquiry for this Court.**

Callaway improperly relies on its prediction that the Federal Circuit would not accept certification of this issue as a reason that this Court should not certify the question Acushnet presents. [D.I. 70 at 7-9.] Whether the Federal Circuit would accept certification is not a factor that the Court should consider in deciding whether to certify the question presented. Instead, § 1292(b), and the cases interpreting it, have set forth the three factors that the Court should consider, namely, (a) whether the order involves a controlling question of law; (2) whether there is substantial ground for difference of opinion; and (3) whether an immediate appeal from the order may materially advance the ultimate termination of the litigation. 28 U.S.C. § 1292(b); *Taylor v. PPG Indus., Inc.*, 256 F.3d 1315, 1316 (Fed. Cir. 2001). No part of this analysis involves the trial court making a prediction about what action the Federal Circuit will take.

Callaway argues that the Federal Circuit has "absolute discretion" to accept or decline review of a certified question on interlocutory appeal, citing *Nystrom v. TREX Co., Inc.*, 339

F.3d 1347, 1351 (Fed. Cir. 2003) [D.I. 70 at 7-8.]. The fact that the Federal Circuit has such discretion is irrelevant. Callaway's invitation to predict what the Federal Circuit will do with the certified question is neither appropriate nor supported by any case law it cites.

In addition, Callaway's prediction that the Federal Circuit would not accept the certified question that Acushnet urges is also not supported by the case law cited by Acushnet. While 1292(b) appeals to the Federal Circuit may be rarely granted, Acushnet has cited several cases in which the Federal Circuit has accepted certification, especially where there is a question of law that has broad impact, like the question presented in this case. [D.I. 66 at 12.] *See Symbol Techs.*, 56 U.S.P.Q. 2d at 1382 (application of laches to patent prosecution); *U.S. Philips Corp. v. Sears Roebuck & Co.*, 1992 U.S. App. LEXIS 37824, at \*4 (Fed. Cir. Aug. 30, 2000) (whether antitrust claims should have been brought as compulsory counterclaims in another case between the parties); *Nutrition 21 v. United States*, 907 F.2d 157, 157 (Fed. Cir. 1990) (whether the United States could be made an involuntary plaintiff).

**4. First-to-file principles are analogous to the situation presented here of a first-filed *inter partes* reexamination**

Despite Callaway's unsupported assertion otherwise, Acushnet provided in its opening brief the rationale behind analogizing the present situation to a first-to-file situation involving two litigations. As set forth in Acushnet's opening brief, the same policy reasons behind the first-to-file jurisprudence (*i.e.*, avoiding the economic waste involved in duplicative litigation), apply with equal force to the situation where the first filed case is an *inter partes* reexamination rather than a litigation. [D.I. 66 at 6-11.]

Indeed, Callaway's own arguments support Acushnet's position that a rule analogous to first-to-file should be used here. Callaway argues that in the event that this Court finds that the claims of the patents-in-suit are not invalid, that would have the

effect of terminating the reexamination. [D.I. 70 at 14.] This fact bolsters Acushnet's position: that the two proceedings overlap with each other such that one proceeding has a dramatic impact on the other. This overlap in issues is precisely the reason that the matter should be decided in a single forum and in the forum that obtained jurisdiction over the overlapping issues first. In this case, Acushnet filed the reexamination before Callaway filed this litigation, so the issues of validity should be determined in the reexamination proceeding.

Callaway's argument that some issues would not be resolved in the reexamination is the same argument that could be made in many first-to-file cases. [D.I. 70 at 13-14.] However, as first-to-file cases have held on many occasions, there need not be an identity of all issues between the first-filed case and the second-filed case to warrant dismissal, transfer, or stay of the second-filed case. *See* cases cited at D.I. 66 at 7-8. Instead, "[t]he crucial inquiry is one of substantial 'overlap.'" *Save Power Ltd. v. Syntek Fin. Corp.*, 121 F.3d 947, 950 (5th Cir. 1997). While Callaway identifies certain issues that may not be resolved by the reexamination [D.I. 70 at 13], Callaway does not dispute that the primary issue in the litigation will be the invalidity of the patents-in-suit, which is precisely the subject of the reexamination proceedings.

Callaway's argument that there is a different standard of claim construction in reexamination proceedings and litigation is irrelevant. [D.I. 70 at 12.] The important factor is not what the standard for claim construction is, but the fact that both parties will be bound by the decision in the PTO regarding the validity arguments raised there. 35 U.S.C. § 315(c). In this sense, the first-filed *inter partes* reexamination is nearly identical in effect to a first-filed declaratory judgment action, which causes courts to refuse to hear the second-filed infringement case. *See, e.g., Triangle Conduit & Cable Co., Inc. v. Nat. Elec. Prods. Corp.*, 125 F.2d 10087, 1009 (3d Cir. 1942) (enjoining second-filed infringement suit in light of first-filed declaratory judgment suit).



Callaway's argument that the litigation cannot be consolidated with the PTO reexamination is also irrelevant. [D.I. 70 at 12.] First-to-file cases do not always consolidate the two cases. When invoking the first-to-file rule, a court may stay the later-filed case, and need not order the cases consolidated. *See, e.g., RJF Holdings III, Inc. v. Refractec, Inc.*, Civ. Action No. 03-1600, 2003 U.S. Dist. LEXIS 22144, at \*14 (E.D. Pa. Nov. 24, 2003) (staying later-filed patent infringement case in favor of first-filed declaratory judgment case); *Medrad, Inc. v. Invivo Research, Inc.*, Civ. Action No. 00-778, 2000 U.S. Dist. LEXIS 16484, at \*7 (W.D. Pa. Oct. 5, 2000) (staying later-filed declaratory judgment action in favor of first-filed patent infringement case). Just as a court could stay a second-filed infringement action in light of a first-filed declaratory judgment action, this Court should stay the second-filed infringement action in light of the first-filed *inter partes* reexamination proceeding.

Callaway's argument that the PTO would not be able adequately to address secondary considerations of non-obviousness is also misplaced. [D.I. 70 at 12.] The PTO is authorized to consider such secondary considerations, such as commercial success evidence. M.P.E.P § 716.01(a). Callaway already made, and lost, this argument in the reexamination proceedings. In denying Callaway's petition to suspend the reexamination proceedings, the PTO rejected Callaway's argument, noting that secondary considerations of non-obviousness, including commercial success, can be submitted by both sides during the reexamination. [D.I. 66 Ex. 5, at 14.]

#### **B. There Are Substantial Grounds For Disagreement**

Callaway barely addresses Acushnet's argument that there is substantial ground for disagreement on the question presented in this case. [D.I. 70 at 14.] Callaway's only argument on this point is in response to a straw man that Acushnet did not present. Acushnet does not argue that the substantial grounds for disagreement arise by virtue of the fact that some courts deny motions to stay and some courts grant some motions, as

Callaway states. [D.I. 70 at 14.] Instead, Acushnet sets forth in its brief several reasons why there are substantial grounds for disagreement in this case.

First, as Callaway admits, there have been no reported cases that deal with a first-filed *inter partes* reexamination. [D.I. 70 at 9.] Thus, no case has yet decided whether the discretion that a court normally has to manage its docket should extend to that factual situation. Such a dearth of case law on an issue has been cited frequently as a basis to find that there are substantial grounds for disagreement. [D.I. 66 at 15-16.] *See, e.g., Voda v. Cordis Corp.*, 122 Fed. App'x 515, 2005 U.S. App. LEXIS 4394, at \* 2 (Fed. Cir. Feb. 22, 2005); *Century Wrecker Corp. v. Vulcan Equip. Co., Ltd.*, 902 F.2d 43, 43 (Fed. Cir. 1990).

Second, while Acushnet concedes that the reported cases dealing with a second-filed *inter partes* reexamination have all examined the issue as a discretionary one, a stay was granted in each of these cases. Callaway admits as much. [D.I. 70 at 9-10.] Callaway's hope of a silent majority of unreported cases where such stays are denied should carry no weight, since Callaway has made no showing whatsoever that any such case exists. [D.I. 70 at 9.] The fact that all reported cases use their discretion to grant a stay when there is a second-filed *inter partes* reexamination lends credence to Acushnet's argument that there should very rarely be a circumstance in which the Court denies a stay when there is a first-filed *inter partes* reexamination. Thus, these cases support the fact that there are substantial grounds for disagreement in this case.

Third, the fact that the intent of Congress would be subverted by Callaway's arguments, which would essentially lead to a bright-line rule against granting stays where there is an *inter partes* reexamination, also suggests that there are substantial grounds for disagreement.

Finally, the *Sony Computer* case, cited by Acushnet in its opening brief, also suggests that courts are willing to treat co-pending litigations and *inter partes* reexamination proceedings as if they were two co-pending litigations: *i.e.*, the second-



filed case should be stayed pending resolution of the first-filed case. *See Sony Computer Entm't Am. Inc. v. Dudas*, 2006 U.S. Dist LEXIS 36856 (E.D. Va. May 22, 2006) (upholding the suspension of an *inter partes* reexamination proceeding in light of a first-filed litigation on the same patents).

Callaway's lack of response to these arguments is telling. The Court should easily find that there are substantial grounds for disagreement in this case.

**C. Immediate Appeal Would Materially Advance the Issues Presented in This Litigation**

Callaway's argument that an appeal in this case would not materially advance the litigation is based almost entirely on the argument that the *inter partes* reexamination may take a long time, and thus it would delay ultimate resolution of the litigation. [D.I. 70 at 15-17.] This argument too narrowly construes the requirement of § 1292(b) that the appeal would materially advance the termination of the litigation. This third prong of § 1292(b) may be satisfied where an appeal would simplify or eliminate issues for litigation, regardless of the delay that might accompany such issue simplification. *See, e.g., G-I Holdings, Inc. v. Bennet*, Civil No. 02-3626, 2005 U.S. Dist. LEXIS 31887, at \*15 (D.N.J. Dec. 9, 2005) (factors to consider include whether the appeal would obviate need for trial, eliminate complex issues and simplify the trial, or eliminate issues).

Callaway continues to rely on cases in which courts have refused to stay proceedings pending *ex parte* reexaminations to support its argument that staying a case pending reexamination does not necessarily simplify the issues in a litigation. [D.I. 70 at 15-6 (citing *NTP, Inc. v. Research In Motion, Ltd.*, 397 F. Supp. 2d 785, 787 (E.D. Va. 2005); and *Soverain Software LLC v. Amazon.com, Inc.*, 356 F. Supp. 2d 660 (E.D. Tex. 2005)).] Such *ex parte* cases, however, are much different from the situation before the Court here. In the context of an *inter partes* reexamination, both parties will be bound by the decision of the PTO (and subsequent appeal, if any, of that decision). 35 U.S.C. § 315(c). Thus, the reexamination in this case will have a much greater effect of

removing issues from the case than an *ex parte* reexamination. This is especially true in this case, where the issues to be litigated are primarily validity issues. Thus, Callaway's cases are not persuasive.

In addition, Callaway does not address the fact that *inter partes* reexamination proceedings have an almost certain effect of rejecting, canceling, or amending the claims of patents, as set forth in Acushnet's opening brief. [D.I. 66 at 18.] The probability that the reexamination will lead to invalidation of claims is even more certain in this action than in most cases. The Board of Patent Appeals and Interferences ("BPAI") has already decided the issue that will be presented in the reexamination in this case. In a patent application related to the patents-in-suit, the BPAI determined that the combination of the Nesbitt and Wu patents<sup>2</sup> would have rendered the claim at issue in that application obvious. In doing so, the BPAI held:

In applying the test for obviousness, we conclude that the teachings of Wu clearly would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to achieve the expected benefits therefrom taught by Wu (i.e. to have the "click" and "feel" of balata; improved shear resistance and cut resistance; durability; and resiliency.) Thus, it would have been obvious to one skilled in the art to have modified Nesbitt's three-piece golf ball having a spherical core, an inner cover layer of type 1605 Surlyn® and an outer layer of type 1855 Surlyn® by replacing the type 1855 Surlyn® in the outer layer with polyurethane as suggested and taught by Wu.

*Ex parte Sullivan*, Appeal No. 2004-0242, 2001 Pat. App. LEXIS 114 at 11 (Bd. Pat. App. & Int. Jan. 30, 2004) (emphasis added) (attached hereto as Ex. A).

For comparison, claim 7 at issue in that application, which the BPAI held to be obvious over Nesbitt and Wu, and claim 8 of U.S. Patent No. 6,503,156 ("the '156 patent"), one of the patents-in-suit in this case, are shown below:

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<sup>2</sup> U.S. Patent No. 4,431,193 to Nesbitt and U.S. Patent No. 5,334,673 to Wu.

Rejected Claim 7 in BPAI decision <sup>3</sup>	Claim 8 of '156 patent
<p>7. A golf ball comprising:</p> <p>a core;</p> <p>an inner cover layer disposed about said core and having a thickness of from about 0.10 to about 0.01 inches, and comprising an ionomeric resin including no more than 16% by weight of an alpha, beta unsaturated carboxylic acid and having a modulus of from about 15,000 to about 70,000 psi; and</p> <p>an outer cover layer disposed about said inner cover layer comprising a polyurethane material.</p>	<p>8. A golf ball comprising:</p> <p>a core;</p> <p>an inner cover layer disposed on said core, said inner cover layer having a Shore D hardness of about 60 or more, said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta unsaturated carboxylic acid and having a modulus of from about 15,000 to about 70,000 psi; and</p> <p>an outer cover layer disposed about said inner cover layer, said outer cover layer having a thickness of from about 0.01 to about 0.07 inches, and comprising a polyurethane material.</p>

Acushnet's reexamination request on the '156 patent argues precisely the point that the BPAI has already accepted in the related Sullivan patent application. For example, Acushnet argues in its reexamination request on the '156 patent that claim 8 would have been obvious over the combination of Nesbitt and Wu for precisely the same reason as that accepted by the BPAI in the related Sullivan application:

While Nesbitt discloses a particular soft, low modulus polyurethane material (i.e., Estane 58133) for use as a golf ball cover, it would have been obvious to use the polyurethane taught by Wu as a golf ball cover at the time of the alleged invention.

Request for Reexamination of U.S. Patent No. 6,503,156, at 55 (attached hereto as Ex. B).

Acushnet makes a similar argument for every claim of the patents-in-suit where the claim requires the use of polyurethane in the outer cover material of the golf ball.

<sup>3</sup> Ex. A. at 3.

Thus, the BPAI has already accepted Acushnet's arguments that it makes to invalidate the claims of the patents-in-suit that are currently in reexamination.

Callaway argues in its opposition that an appeal would not materially advance the litigation, in part because the litigation would have to wait for the Board of Patent Appeals to make its determination on appeal. [D.I. 70 at 16-17.] The fact that the BPAI has already heard the issue that will resolve Acushnet's reexamination requests of the patents-in-suit, and resolved the issue in Acushnet's favor, is an extremely strong indication that the BPAI would find the claims of the patents-in-suit invalid for precisely the same reason.

### III. CONCLUSION

For these reasons, and those stated in Acushnet's opening brief, this Court should certify its Order for interlocutory appeal and stay this litigation while the appeal is pending.

Respectfully submitted,

POTTER ANDERSON & CORROON LLP

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Dated: December 21, 2006

768985 / 30030

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**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

**CERTIFICATE OF SERVICE**

I, David E. Moore, hereby certify that on December 21, 2006, the attached document was hand delivered to the following persons and was electronically filed with the Clerk of the Court using CM/ECF which will send notification to the registered attorney(s) of record that the document has been filed and is available for viewing and downloading:

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# **EXHIBIT A**

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 17

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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Ex parte MICHAEL J. SULLIVAN

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Appeal No. 2004-0242  
Application No. 09/873,594

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ON BRIEF

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Before GARRIS, NASE, and CRAWFORD, Administrative Patent Judges.  
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 4 to 7, 10 to 13 and 16 to 18, which are all of the claims pending in this application.

We AFFIRM.

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### BACKGROUND

The appellant's invention relates to golf balls and, more particularly, to improved standard and oversized golf balls comprising multi-layer covers which have a comparatively hard inner layer and a relatively soft outer layer such as that produced by the use of a polyurethane based outer layer. The improved multi-layer golf balls provide for enhanced distance and durability properties over single layer cover golf balls while at the same time offering enhanced "feel" and spin characteristics generally associated with soft balata and balata-like covers of the prior art (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellant's brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Nesbitt	4,431,193	Feb. 14, 1984
Wu	5,334,673	Aug. 2, 1994

Claims 1, 4 to 7, 10 to 13 and 16 to 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nesbitt in view of Wu.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the answer



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(Paper No. 15, mailed June 16, 2003) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 14, filed March 21, 2003) for the appellant's arguments thereagainst.

### OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

#### **Claimed Subject Matter**

The independent claims on appeal read as follows:

1. A golf ball comprising:  
a core;  
an inner cover layer disposed on said core and having a Shore D hardness of 60, [sic] or greater [,] a thickness of from about 0.10 to about 0.01 inches, and comprising a low acid ionomer resin containing no more than 16% by weight of an alpha, beta unsaturated carboxylic acid; and  
an outer cover layer comprising a polyurethane material.
7. A golf ball comprising:  
a core;  
an inner cover layer disposed about said core and having a thickness of from about 0.10 to about 0.01 inches, and comprising an ionomeric resin including no more than 16 % by weight of an alpha, beta-unsaturated carboxylic acid and having a modulus of from about 15,000 to about 70,000 psi; and  
an outer cover layer disposed about said inner cover layer comprising a polyurethane material.

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13. A golf ball comprising;  
a core;  
an inner cover layer disposed on said core comprising an ionomer resin;  
and  
an outer cover layer disposed about said inner cover layer comprising a polyurethane material.

### Teachings of Nesbitt

Nesbitt's invention relates to a golf ball and more particularly to a cover construction for a golf ball. In the BACKGROUND ART section of the patent (column 1, lines 9-33), Nesbitt teaches:

Golf balls having a cover material marketed under the trademark "Surlyn" by E. I. du Pont de Nemours and Company of Wilmington, Del., are known in the art and such cover compositions generally comprise a copolymer of an olefin and at least one unsaturated monocarboxylic acid. Conventional two-piece golf balls are comprised of a solid resilient center or core with molded Surlyn covers. The cover used is normally a hard, high flexural modulus Surlyn resin in order to produce a gain in the coefficient of restitution over that of the center or core.

In a conventional two-piece golf ball, a hard, high flexural modulus Surlyn resin is molded over a resilient center or core. The hard, highly flexural modulus Surlyn resin for the cover of a two-piece golf ball is desirable as it develops the greatest hoop stress and consequently the greatest coefficient of restitution.

A two-piece golf ball having a hard, Surlyn resin cover however does not have the "feel" or playing characteristics associated with softer balata covered golf balls. Heretofore balata covered golf balls have been preferred by most golf professionals. If a golf ball has a cover of soft, low flexural modulus Surlyn resin molded directly over a center or core, it is found that little or no gain in coefficient of restitution is obtained.

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Nesbitt then teaches in the DISCLOSURE OF THE INVENTION section of the patent (column 1, line 36, to column 2, line 9) that:

In accordance with the present invention there is provided a golf ball having a multilayer or two-ply cover construction for a solid resilient center or core wherein the multilayer cover construction involves two stage molded cover compositions over a solid center or core of resilient polymeric material wherein an increased coefficient of restitution is attained and wherein the "feel" or playing characteristics are attained similar to those derived from a balata covered golf ball.

The invention embraces a golf ball and method of making same wherein the ball has a solid center or core of resilient polymeric or similar material covered by a first layer or ply of molded hard, highly flexural modulus resinous material or of cellular or foam composition which has a high coefficient of restitution.

The first layer or ply is provided with a second or cover layer of a comparatively soft, low flexural modulus resinous material or of cellular or foam composition molded over the first layer and core or center assembly. Such golf ball has the "feel" and playing characteristics simulating those of a softer balata covered golf ball.

Through the use of the first ply or layer of hard, high flexural modulus resinous material on the core or center, a maximum coefficient of restitution may be attained. The resinous material for the first ply or layer may be one type of Surlyn marketed by E. I. du Pont de Nemours and Company of Wilmington, Del., and the other ply or cover layer may be of a different type of Surlyn resin also marketed by the same company.

The three-piece golf ball of the invention provides a golf ball in which the coefficient of restitution of the golf ball closely approaches or attains that which provides the maximum initial velocity permitted by the United States Golf Association Rules of two hundred fifty feet per second with a maximum tolerance of two percent, which velocity may be readily attained and the playing characteristics or "feel" associated with a balata covered ball secured while maintaining a total weight of the golf ball not exceeding 1.620 ounces without sacrificing any advantages of a golf ball having a standard Surlyn cover of the prior art or a golf ball having a softer balata cover.

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In the BEST MODE FOR CARRYING OUT THE INVENTION section of the patent (column 2, line 31, to column 3, line 50), Nesbitt teaches:

Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or core 12 formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere. Disposed on the spherical center or core 12 is a first layer, lamination, ply or inner cover 14 of molded hard, highly flexural modulus resinous material such as type 1605 Surlyn marketed by E. I. du Pont de Nemours and Company, Wilmington, Del.<sup>[1]</sup>

This material of the inner layer 14 being a hard, high flexural modulus resin produces a substantial gain of coefficient of restitution over the coefficient of restitution of the core or center. An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material such as type 1855 Surlyn marketed by E. I. du Pont de Nemours and Company<sup>[2]</sup> is then re-molded onto the inner ply or layer 14, the outer surface of the outer layer or cover 16 being of dimpled configuration providing a finished three-piece golf ball.

According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches and the maximum weight prescribed for a golf ball is 1.620 ounces. It is therefore desirable to produce a golf ball having an improved coefficient of restitution to attain an initial velocity for the golf ball approaching the maximum velocity limit of 255 feet per second, the maximum limit provided by the United States Golf Association Rules.

The hard, high flexural modulus resin is employed to increase the coefficient of restitution in order to attain or approach the maximum initial velocity for the golf ball. The use of a soft low flexural modulus resin provides little or no gain in the coefficient of restitution and may tend to reduce the coefficient of restitution thereby adversely affecting the initial velocity factor.

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<sup>1</sup> As set forth on page 3 of the appellant's specification Type 1605 Surlyn<sup>®</sup> (now designated Surlyn<sup>®</sup> 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi.

<sup>2</sup> As set forth on page 4 of the appellant's specification Type 1855 Surlyn<sup>®</sup> (now designated Surlyn<sup>®</sup> 9020) is a zinc ion based low acid (10 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 14,000 psi.

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In producing the golf ball of the invention, the density of the center or core may be varied and the relative thicknesses of the layers, plies or laminations 14 and 16 may be varied within limits so that the golf ball weight does not exceed 1.620 ounces, the minimum diameter not less than 1.680 inches, and the ball be capable of an initial velocity approaching 255 feet per second. However, the finished golf ball may be of larger diameter providing the total weight of the ball does not exceed 1.620 ounces.

Thus, by varying the density of the center or core 12 and varying the thicknesses of the plies or layers 14 and 16 of the cover construction, a golf ball may be produced having a total weight not exceeding 1.620 ounces and a minimum diameter of 1.680 inches and having a comparatively high coefficient of restitution, the ball closely approaching or attaining in play the maximum permitted initial velocity of 255 feet per second.

In the golf ball of the invention the thickness of the inner layer or ply 14 and the thickness of the outer layer or ply 16 may be varied to secure the advantages herein mentioned. It is found that the inner layer 14 of hard, high flexural modulus resinous material, such as Surlyn resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches. The thickness of the outer layer or cover 16 of soft, low flexural modulus resin, such as Surlyn type 1855, may be in a range of 0.020 inches and 0.100 inches.

For example, a center or core 12 having a 0.770 coefficient of restitution is molded with a layer of hard, high modulus Surlyn resin, such as Surlyn type 1605, to form a spherical body of a diameter of about 1.565 inches. This spherical body comprising the core or center 12 and layer 14 of the hard, high modulus Surlyn resin has a coefficient of restitution of 0.800 or more.

This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then re-molded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of a soft, low flexural modulus resin such as Surlyn type 1855. The outer layer of the soft resin is of a thickness of 0.0575 inches. The soft Surlyn resin cover would have about the same thickness and shore hardness of a balata covered golf ball and would have the advantageous "feel" and playing characteristics of a balata covered golf ball.

It is to be understood that the golf ball of the invention may be made of a diameter greater than 1.680 inches without exceeding the total weight of 1.620

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ounces by varying the thickness of the inner layer or ply 14 and the outer cover layer or ply 16 and secure desired "feel" and playing characteristics.

### **Teachings of Wu**

Wu's invention relates to golf balls and more particularly to polyurethane covered golf balls made from a polyurethane composition of a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents and difunctional glycols. Wu states (column 1, lines 11-14) that such a golf ball has improved resiliency and shear resistance over golf balls made from conventional polyurethane formulations. Wu teaches (column 1, line 15, to column 2, line 44) that:

Conventionally, golf balls are made by molding a cover about a core that is either a solid one-piece core or a wound core made by winding thin elastic thread about a center. The center is either a solid mass or a liquid-filled envelope which has been frozen prior to winding the thread therearound. Golf balls made from a solid core are referred to conventionally as two-piece balls while those with wound cores are referred to as three-piece balls. Attempts have been made to make a one-piece golf ball, i.e. a solid homogeneous golf ball; however, to date no commercially acceptable one-piece golf ball has been made.

Balata had been used as the primary material for covers of golf balls until the 1960's when SURLYN®, an ionomeric resin made by E.I. duPont de Nemours & Co., was introduced to the golf industry. SURLYN® costs less than balata and has a better cut resistance than balata. At the present time, SURLYN® is used as the primary source of cover stock for two-piece golf balls. The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound made when the ball is hit by a golf club while "feel" is the overall sensation imparted to the golfer when the ball is hit.



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It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.

...

It has now been discovered that a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols produces a golf ball cover that has good durability and performance. Golf balls made in accordance with the present invention have been found to have improved shear resistance and cut resistance compared to golf balls having covers made from either balata or SURLYN®.

Broadly, the present invention is a golf ball product made from a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols. The term "golf ball product" as used in the specification and claims means a cover, a core, a center or a one-piece golf ball. The cover of a golf ball made in accordance with the present invention has been found to have good shear resistance, cut resistance, durability and resiliency. Preferably, the polyurethane composition of the present invention is used to make the cover of a golf ball.

### **The examiner's rejection**

In the rejection of claims 1, 4 to 7, 10 to 13 and 16 to 18 under 35 U.S.C. § 103 (answer, p. 3), the examiner ascertained<sup>3</sup> that Nesbitt discloses all of the claimed subject matter except for the outer cover of the golf ball comprising a polyurethane material. The examiner, in essence, concluded that in view of the teachings of Wu it

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<sup>3</sup> After the scope and content of the prior art are determined, the differences between the prior art and the claims at issue are to be ascertained. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966).

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would have been obvious to one skilled in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to increase the durability of the golf ball.

### **The appellant's argument**

The appellant argues (brief, pp. 4-7) that the rejection under 35 U.S.C. § 103 is erroneous since the applied prior art, absent the use of impermissible hindsight<sup>4</sup>, does not suggest the subject matter of independent claims 1, 7 and 13. In the appellant's view there is no motivation<sup>5</sup> in the applied prior art that would have made it obvious to one of ordinary skill in the art to have modified the golf ball of Nesbitt to arrive at the subject matter of independent claims 1, 7 and 13.

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<sup>4</sup> The use of hindsight knowledge derived from the appellant's own disclosure to support an obviousness rejection under 35 U.S.C. § 103 is impermissible. See, for example, W. L. Gore and Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

<sup>5</sup> Most if not all inventions arise from a combination of old elements. See In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed invention may often be found in the prior art. See id. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. See id. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the appellant. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).



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### **Our Determination**

In applying the test for obviousness<sup>6</sup> we conclude that the teachings of Wu clearly would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to achieve the expected benefits therefrom taught by Wu (i.e., to have the "click" and "feel" of balata; improved shear resistance and cut resistance; durability; and resiliency). Thus, it would have been obvious to one skilled in the art to have modified Nesbitt's three-piece golf ball having a spherical core, an inner layer of type 1605 Surlyn® and an outer layer of type 1855 Surlyn® by replacing the type 1855 Surlyn® in the outer layer with polyurethane as suggested and taught by Wu. Therefore, the teachings of the applied prior art alone (i.e., without the use of impermissible hindsight) are suggestive of the subject matter of independent claims 1, 7 and 13.

In view of our determination above we disagree with the appellant's argument that the rejection under 35 U.S.C. § 103 is erroneous. While the appellant has correctly pointed out the deficiencies of both Nesbitt and Wu on an individual basis, nonobviousness cannot be established by attacking the references individually when

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<sup>6</sup> The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See *In re Young*, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

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the rejection is predicated upon a combination of prior art disclosures. See In re Merck & Co. Inc., 800 F.2d 1091, 1097, 231 USPQ 375, 380 (Fed. Cir. 1986). In our view, the combined teachings of Nesbitt and Wu are clearly suggestive of the claimed subject matter as set forth above. Lastly, we incorporate the examiner's response to the appellant's argument (answer, pp. 4-7) as our own.

For the reasons set forth above, the decision of the examiner to reject independent claims 1, 7 and 13, and claims 4 to 6, 10 to 12 and 16 to 18 dependent thereon, under 35 U.S.C. § 103 is affirmed.

#### CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 4 to 7, 10 to 13 and 16 to 18 under 35 U.S.C. § 103 is affirmed.

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No time period for taking any subsequent action in connection with this appeal  
may be extended under 37 CFR § 1.136(a).

AFFIRMED

BRADLEY R. GARRIS  
Administrative Patent Judge

JEFFREY V. NASE  
Administrative Patent Judge

MURRIEL E. CRAWFORD  
Administrative Patent Judge

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Appeal No. 2004-0242  
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# **EXHIBIT B**

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No.: 6,503,156

Inventor: Michael J. SULLIVAN

Issued: January 7, 2003

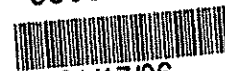
Appl. 09/873,642

Filed: June 4, 2001

Titled: GOLF BALL HAVING MULTI-LAYER COVER WITH UNIQUE OUTER COVER CHARACTERISTICS



66548 U.S. PTO  
95000121



01/17/06

REQUEST FOR REEXAMINATION  
UNDER 35 U.S.C. §§ 301-307, 314  
AND 37 C.F.R. §§1.913-1.914

RECEIVED  
JAN 17 2006

## BOX REEXAM

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

## INTER PARTES REEXAMINATION REQUEST TRANSMITTAL

Enclosed are:

1. Certification under 37 C.F.R. §§ 1.915(b)(7),(8) (1 sheet)
2. Certification under 37 C.F.R. § 1.915(b)(6) (2 sheets)
3. Submission under 37 C.F.R. § 1.915(b)(5) (1 sheet), including Terminal Disclaimer filed January 4, 2002 (4 sheets) and Certificate of Correction issued October 28, 2003 (1 sheet).
4. Submission of Prior Art under 37 C.F.R. § 1.915(b)(4) (1 sheet), including:
  - a. Information Disclosure Citation (1 sheet)
  - b. U.S. Patent No. 4,431,193
  - c. U.S. Patent No. 4,274,637
  - d. U.S. Patent No. 5,334,673
  - e. U.S. Patent No. 4,674,751
  - f. U.S. Patent No. 5,314,187
  - g. Surlyn® Thermoplastic Resins Product Information (1 sheet)
  - h. Estane® Thermoplastic Polyurethane Product Data Sheet (1 sheet)
5. Request for *Inter partes* Reexamination of U.S. Patent No. 6,503,156 (73 sheets)

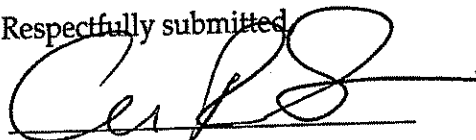
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6. Appendix to *Inter partes* Reexamination request, including:
- a. Exhibit A: U.S. Patent No. 6,503,156
  - b. Exhibit B: U.K. Patent No. 1,515,196
  - c. Exhibit C: Titleist Marketing Materials & USA Today Article (12 sheets)
  - d. Exhibit D: "History and Construction of Non-Wound Golf Balls" (9 sheets)
  - e. Exhibit E: U.K. Patent No. 869,490
  - f. Exhibit F: U.S. Patent No. 3,112,521
  - g. Exhibit G: "The Relationship Between Golf Ball Construction and Performance" (6 sheets)
  - h. Exhibit H: U.S. Patent No. 5,150,906
  - i. Exhibit I: Surlyn® Thermoplastic Resins Product Information (1 sheet)
  - j. Exhibit J: Estane® Thermoplastic Polyurethane Product Data Sheet (1 sheet)
  - k. Exhibit K: *Ex parte* Sullivan BPAI Decision (16 sheets)
  - l. Exhibit L: U.S. Patent No. 6,905,648
  - m. Exhibit M: "History and Evolution of the Golf Ball and Golf" (2 sheets)
7. Declaration of Jeffrey L. Dalton under 37 C.F.R. § 1.132 (2 sheets)
8. Declaration of Edmund A. Hebert under 37 C.F.R. § 1.132 (9 sheets)
9. Fee Transmittal (1 sheet)
10. One (1) Return Postcard

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re U.S. Patent No.: 6,503,156

Inventor: Michael J. SULLIVAN

Issued: January 7, 2003

Appl. 09/873,642

Filed: June 4, 2001

Titled: **GOLF BALL HAVING MULTI-LAYER  
COVER WITH UNIQUE OUTER  
COVER CHARACTERISTICS**

**REQUEST FOR REEXAMINATION  
UNDER 35 U.S.C. §§ 301-307, 314 AND  
37 C.F.R. §§1.913-1.914**

**BOX REEXAM**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**REQUEST FOR *INTER PARTES* REEXAMINATION OF  
U.S. PATENT NO. 6,503,156**

Sir:

*Inter partes* reexamination is hereby respectfully requested, pursuant to 35 U.S.C. §§ 301-307, 314 and 37 C.F.R. §§1.913-1.914 of United States Patent No. 6,503,156 ("the '156 patent"), which issued on January 7, 2003 to Michael J. Sullivan. The '156 patent is assigned to Callaway Golf Company and a copy is attached hereto as **Exhibit A**. The filing date was June 4, 2001 and therefore the '156 patent is eligible for *inter partes* reexamination. This request is filed within the period of enforceability as required by 37 C.F.R. § 1.913. The party requesting this *inter partes* reexamination proceeding is not subject to the estoppel provisions of 37 C.F.R. § 1.907. This request is accompanied by the fee for requesting *inter partes* reexamination set in 37 C.F.R. § 1.20(c)(2). The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 08-3038 referencing docket number **00634.0004.RXUS04**.



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VII. CONCLUSION ..... 70

## I. INTRODUCTION AND OVERVIEW

The references cited herein raise substantial new questions of patentability that render the issued claims in the '156 patent invalid.

The '156 patent claims a golf ball with a two-piece cover comprising a relatively hard inner cover layer and a polyurethane outer cover. This two-piece cover construction was well known in the art since the 1980s, as shown by references such as Nesbitt, discussed herein.

The '156 patent has an effective filing date of 1995. It is part of a large group of related applications. To distinguish his claims from the prior art, the Applicant in this family sought to add limitations to various material properties such as hardness, flexural modulus, thinness, and other parameters of golf ball cover layers. But, the '156 patent claims cover layer properties that were inherent in the prior art or intrinsic to prior art golf ball cover layers. As a result, the claims of the '156 patent are anticipated under §102(b) and/or are obvious under § 103(a) in view of the prior art references cited herein.

Callaway is also the owner of certain other patents which have claims that are substantially similar to the claims of the '156 patent. These patents include United States Patent No. 6,210,293, United States Patent No. 6,506,130 and United States Patent No. 6,595,873. Acushnet has contemporaneously filed requests for reexamination of these patents as well.

The request raises substantial new questions of patentability not previously considered by the PTO; indeed, the request demonstrates that the issued claims of the '156 patent are invalid. For the reasons discussed herein, and pursuant to MPEP §§ 2600 *et seq.*, *inter partes* reexamination of each claim of the '156 patent on the merits is proper.

## II. CLAIMS FOR WHICH *INTER PARTES* REEXAMINATION IS REQUESTED

*Inter partes* Reexamination is requested for all claims (1-11) of the '156 patent.

Claims 1, 4 and 8 are the independent claims. Claim 1 recites specific features of a multi-layer golf ball including an inner cover layer made of a blend of two low-acid ionomer resins resulting in a cover having a prescribed Shore D hardness and thickness as well as an outer cover made of "relatively soft" polyurethane material and having a prescribed Shore D hardness and thickness. Claims 2 and 3 depend directly from claim 1 and further limit the diameter of the golf ball and the thicknesses of the various cover layers.

Claim 4, like claim 1, is limited to a multi-layer golf ball including a low-acid ionomer inner cover layer having a prescribed Shore D hardness and flexural modulus and an outer cover layer made of a polyurethane material having a prescribed Shore D hardness. Moreover, claim 4 requires that the golf ball have dimples. Claims 5 and 6 depend from claim 4 and further limit the thickness of the inner and outer cover layers.

Claim 7 is also limited to a multi-layer golf ball including a low-acid ionomer inner cover layer having a prescribed Shore D hardness and flexural modulus and an outer cover layer made of a polyurethane material having a prescribed Shore D hardness and flexural modulus. Claim 7, like claim 4, is also limited to a golf ball that includes dimples.

Claim 8 is another independent claim and requires that the golf ball have an inner cover layer and an outer cover layer. The inner cover layer is made of an ionomer resin and has a prescribed hardness and modulus. The outer cover layer is made of a polyurethane material and has a prescribed thickness. Claim 9 depends directly from claim 8 and further limits the hardness of the outer cover layer. Claims 10 and 11 depend directly from claim 8 and further limit the hardness of the outer cover layer.

### III. REFERENCES THAT FORM THE BASIS FOR THE REQUEST FOR REEXAMINATION.

#### A. References that Raise Substantial New Questions of Patentability

The following table sets forth the references relied upon in this Request for *inter partes* Reexamination. Each of the cited references is prior art to the '156 patent based on its respective date under 35 U.S.C. § 102(b), as set forth below.

Reexam Claim Numbers	References Applied Against the Claims of the '156 Patent
1-11	Anticipated by United States Patent No. 4,431,193 to R. Dennis Nesbitt ("Nesbitt") (issued Feb. 14, 1984) under 35 U.S.C. § 102(b).
1-11	Obvious under 35 U.S.C. § 103(a) over Nesbitt in view of United States Patent No. 4,274,637 to Robert P. Molitor ("Molitor '637") (issued Jun. 23, 1981).
1-11	Obvious under 35 U.S.C. § 103(a) over Nesbitt in view of United States Patent No. 5,334,673 to Shenshen Wu ("Wu") (issued Aug. 2, 1994).
1-11	Obvious under 35 U.S.C. § 103(a) over Nesbitt in view of United States Patent No. 4,674,751 to Robert P. Molitor ("Molitor '751") (issued Jun. 23, 1987).
1-11	Obvious under 35 U.S.C. § 103(a) over United States Patent No. 5,314,187 to James R. Proudfit ("Proudfit") (issued May 24, 1994) in view of Molitor '637.
1-11	Obvious under 35 U.S.C. § 103(a) over Proudfit in view of Wu.
1-11	Obvious under 35 U.S.C. § 103(a) over Proudfit in view of Molitor '751.

While each of these references were cited in an information disclosure statement during the prosecution of the '156 patent, none of these references were applied in a rejection against the claims of the '156 patent. Molitor '637 was cited against the claims of U.S. Patent Application

Serial No. 08/070,510.<sup>1</sup> However, the inherent properties of the soft polyurethane disclosed in Molitor '637, relied on herein, were not before the examiner. The Proudfit patent was originally cited by the examiner in U.S. Patent Application Serial No. 08/870,585.<sup>2</sup> However, as we will show herein, Proudfit, prior art to the claims of the '156 patent under § 102(b), was improperly removed in a prior application using an inappropriate Rule 131 declaration.

### **B. Summary of the Substantial New Questions of Patentability**

In summary this request raises at least the following substantial new questions of patentability that were not previously considered by the PTO: (1) Nesbitt's incorporation by reference of Molitor '637 anticipates all claims of the '156 patent; (2) inherent properties of Molitor '637's Estane polyurethane were not before the Examiner and hence not considered; (3) Proudfit was improperly antedated in a previous application although it anticipates and/or renders obvious all claims of the '156 patent; (4) Proudfit also has inner and outer cover layers that have inherent properties not previously before the PTO; (5) the inherent properties of Wu's polyurethane were not previously considered by the PTO; and (6) the Shore D hardness of Molitor '751 was not before the PTO. Because numerous properties recited in the claims were inherently present in the references and not previously considered by the PTO these references raise substantial new questions of patentability and reexamination is proper.

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<sup>1</sup> Nesbitt was cited by Examiner Graham in an office action dated April 8, 1994. In this office action, Examiner Graham found that the combination of Nesbitt with United States Patent No. 5,068,151 to Nakamura rendered the claims obvious under 35 U.S.C. § 103(a). This rejection was repeated in U.S. Patent Application Serial No. 08/556,237 in office actions mailed February 8, 1996 and December 6, 1996.

<sup>2</sup> Proudfit was cited by Examiner Graham in an office action dated July 8, 1998. In U.S. Pat. App. Serial No. 08/070,510. In this office action, Examiner Graham found that the Proudfit patent rendered the claims obvious under 35 U.S.C. § 103(a). This rejection was repeated in an office action dated December 21, 1998. This rejection was mistakenly withdrawn due to a declaration under 37 C.F.R. § 1.131 that was submitted in copending U.S. Application Serial No. 08/926,246. As will be explained in further detail herein, because the '510 application did not enable or describe a low-acid ionomer, which is an essential part of each and every claim of the '156 patent, Proudfit qualifies as 102(b) prior art and cannot be sworn behind. See M.P.E.P. § 715 (stating that Rule 1.131 declarations are inappropriate where "the reference publication date is more than 1 year prior to applicant's or patent owner's effective filing date.")

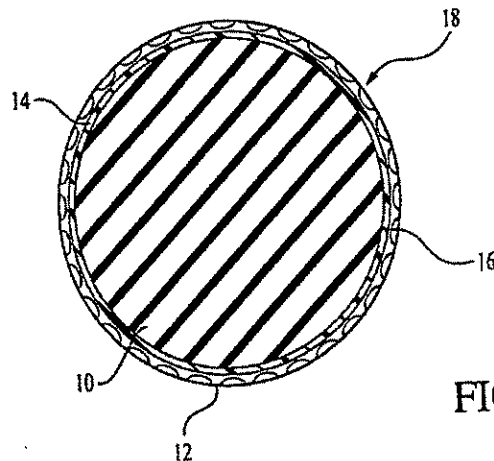


None of the arguments herein were considered before by the PTO during prosecution of the '156 patent. The inherent properties of the soft polyurethane outer cover layer materials in various references were not before the PTO during the original prosecution of this application. This request raises several substantial new questions of patentability with respect to the claims of the '156 patent. Indeed, each of the claims of the '156 patent is invalid.

#### IV. BACKGROUND TO THE '156 PATENT

##### A. Summary of the Relevant Disclosure of the '156 Patent

The '156 patent is directed towards a multi-layer golf ball including a hard ionomer inner cover layer and a soft polyurethane outer cover layer. Figure 1 of the '156 patent shows such a multi-layer golf ball and is reproduced below. According to the '156 patent, golf balls including hard, low acid (i.e., less than 16% acid) ionomeric inner cover layers and soft polyurethane outer cover layers "provide[] for enhanced distance without sacrificing playability or durability when compared to known multi-layer golf balls." ('156 patent, Abstract.)





The '156 patent discloses an inner cover layer that comprises a blend of low acid ionomer resins that has a Shore D hardness<sup>3</sup> of 60 or greater and an outer cover made of polyurethane having a preferred Shore D hardness of about 45. ('156 patent, col. 3, lines 34-38.) All claims of the '156 patent require that the outer layer be made using a polyurethane material. However, the '156 patent also discloses that blends of low acid ionomers used as the outer cover can provide similar benefits to polyurethane outer covers (i.e., they "provide[] for enhanced feel, and playability characteristics typically associated with balata or balata-blend balls.") ('156 patent, col. 6, lines 14-19.) Thus, the Applicant himself recognized the substitutability of soft ionomers or ionomer blends for soft polyurethane material.

The golf ball described in the '156 patent includes inner and outer covers that can have certain material properties including flexural modulus<sup>4</sup> characteristics. For example, according to one embodiment disclosed in the '156 patent, the outer cover layer may include a blend of low-acid ionomers and may have a flexural modulus of between 1,000 and 10,000 psi. ('156 patent, col. 9, lines 54-58.) Additionally, the '156 patent specification defines a high modulus ionomer as an ionomer having a flexural modulus between 15,000 and 70,000 psi and describes the outer cover layer as having a modulus of between 1,000 and 10,000 psi. ('156 patent, col. 6, lines 19-26.)

The golf ball inner and outer cover layers may have certain prescribed cover thicknesses. For example, the '156 patent discloses that the outer cover layer can have a thickness of between about 0.010 inches to about 0.050 inches and that the inner cover layer can have a thickness of

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<sup>3</sup> "Shore D hardness is a measure of the resistance of a material to indentation. The higher the Shore D number, the greater the resistance to indentation." ENGINEERED MATERIALS HANDBOOK, VOL. 2 at 38. In measuring Shore D hardness, a Shore D durometer is used.

<sup>4</sup> Flexural modulus is a ratio of stress to strain when the material being tested is being flexed. ENGINEERED MATERIALS HANDBOOK, VOL. 2 (ENGINEERING PLASTICS) 18 (1988).

between about 0.100 inches to about 0.010 inches to produce a golf ball having a diameter of 1.680 inches or more. ('156 patent, col. 13, line 61 to col. 14, line 2.)

### **B. Ordinary Skill in the Art**

Those of ordinary skill in the art at the time of the alleged invention had a number of years of experience in golf ball design. The person of ordinary skill in the art would recognize that playability properties, such as the ability to impart spin or draw on the golf ball, are important features for skilled professional or low handicap golfers. Additionally, this person would realize that a soft outer cover layer over a hard inner layer would produce a golf ball that had good playability properties and would be resilient as well. (See United States Patent No. 5,150,906, col. 10, lines 28-39 (**Exhibit H**)). This person would also recognize that the mechanical properties of the materials—rather than the particular materials themselves—played an important role in designing a golf ball having properties acceptable for a professional or low handicap golfer.

One of ordinary skill in the art would find themselves bound by the U.S.G.A. rules of golf as defining limits for various properties of a golf ball. (See M.J. Sullivan & T. Melvin, "The relationship between golf ball construction and performance," from Science and Golf II: Proceedings of the World Scientific Congress of Golf (1994) (**Exhibit G**)). Additionally, due to the minimal amount of technical literature published on golf ball design, those of ordinary skill in the art would be aware of the teachings of prior art patents.

### **C. Prior Art Golf Balls**

For many years, golf balls included wound cores and were covered by balata, a natural rubber that comes from trees in South America. In fact, prior to 1994, the PGA tour was dominated by balata golf balls. Balata, however, had a number of drawbacks. Balata covered golf balls were expensive to manufacture and were also easily cut or damaged when struck by a golf club.

Therefore, at least as early as the 1960's—well before the filing of the '510 application—golf ball manufacturers were looking for substitutes to balata. One exemplary class of materials found to be substitutable for balata was the ionomer resin. One example of an ionomer resin is the ionomer resin sold under the trade name Surlyn® by E.I. DuPont de Nemours. (See Nesbitt, col. 1, lines 9-19; Great Britain Application Publication 1 515 196 (“GB '196”), col. 1, lines 27-33 (**Exhibit B**.) However, Surlyn® resins were not acceptable to professional golfers because they lacked the “click” and “feel” of balata-covered golf balls.<sup>5</sup> (GB '196, col. 1, lines 33-37; Wu, col. 1, lines 34-36.) These issues with Surlyn® covers were known to those skilled in the art at least as early as the 1970's. The deficiencies associated with ionomer resin covers led those skilled in the art to pursue other materials for golf ball outer cover layers including polyurethane.

**1. Polyurethane Has Been a Well-Known Outer Cover Material for Golf Balls Since at Least the Early 1960's**

In 1993, Acushnet revolutionized golf ball cover materials and introduced its Titleist Professional™ golf ball that included a soft polyurethane outer cover layer. By 1994, well over one year before the effective filing date of the claims of the '156 patent, the Titleist Professional™ golf ball was the #1 golf ball on the PGA Tour. The polyurethane used in the Titleist Professional™ golf ball is described in the Wu patent. (**Exhibit C**; see also Decl. of Jeffrey L. Dalton at ¶¶ 3-4.)

The inventor of the '156 patent himself co-authored an article in the late 1990's that discusses Robert Molitor's urethane-covered golf balls that were patented and sold as the “Executive” and “Executive II” golf balls in the late 1960's and early 1970's. Science and Golf III: Proceedings of the 1998 World Scientific Congress of Golf, “History and Construction of

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<sup>5</sup> The professional golfer is a low handicap golfer who places value on golf balls that provide good distance off the tee (i.e., that are resilient) and have good playability characteristics (e.g., spin, puttability).

Non-Wound Golf Balls,” at 409 (1999) (**Exhibit D.**) In this article, the inventor stated that “polyurethanes have been used in golf balls for decades and offer good resilience, excellent abrasion resistance, and reasonable ease of molding.” (*Id.* at 413.) Thus, the inventor himself saw the evolution of the polyurethane cover beginning well before the critical date.

One Acushnet publication, GB '196, published June 21, 1978, teaches that polyurethane is a good substitute for balata:

One cover material which has been looked at as a substitute for balata or Surlyn resin is polyurethane. The great advantage to polyurethane is that it combines relatively low price with the good cut resistance of Surlyn resin and the good click and feel of Balata.

(GB '196 at col. 1, lines 38-44 (**Exhibit B.**)) Other patents also recognized benefits of using polyurethane as an outer cover for a golf ball including, for example, increased durability. For example, GB 869,490, published May 31, 1961, taught:

It has been discovered that liquid urethane polymers are admirably suited for use as a golf ball cover material .... [because] when applied to a golf ball center as hereinafter described form a strong, though, resilient cover which is highly resistant to damage when the ball is struck by a golf club.

(Great Britain Application Publication 869,490 (“GB '490”), p.2, col. 1, lines 21-31 (**Exhibit E.**)) Additionally, U.S. Patent No. 3,112,521, issued on December 3, 1963 taught that, in addition to durability, some polyurethanes yielded manufacturing advantages as well:

It has recently been proposed to use urethane polymers as materials for covering golf balls. Such materials have substantial advantages in that they provide a cover which is extremely tough and highly resistant to cutting or other damage in use. In addition, liquid urethane polymers offer manufacturing advantages because such polymers may be applied, set and cured at normal room temperatures ....

(U.S. Patent No. 3,112,521, col. 1, lines 24-32 (**Exhibit F.**))

One of ordinary skill in the art would have realized that a soft polyurethane material was substitutable for both balata and ionomer resins as outer cover materials for golf balls well before the effective filing date of April 10, 2001. Moreover, those of ordinary skill in the art at the time of invention would have appreciated the advantages of polyurethane outer covers for golf balls. This is particularly true given the fact that the Titleist Professional™ had become the #1 ball on the PGA Tour in 1994, well before the effective filing date of the claims.

**2. Golf Balls having Relatively Hard Inner Covers and Relatively Soft Outer Covers as Claimed in the '156 Patent were Well Known in the Art Prior to the Alleged Date of Invention**

At least one golf ball including a hard, high modulus inner cover layer and a relatively soft, low modulus outer cover layer was introduced by Wilson Sporting Goods Co. in 1993 when Wilson released its Wilson Ultra Tour Balata golf ball. This golf ball included a solid core, an inner cover layer including a blend of low-acid ionomers and a synthetic balata outer cover layer material including a thermosetting polymeric material. The Wilson Ultra Tour Balata golf ball is described in the Proudfit patent which will be discussed in detail below. As discussed above, however, the Wilson Ultra Tour Balata ball included a 'balata' cover material, which was quickly becoming obsolete in late 1993 and early 1994.

Additionally, golf balls including a relatively hard, high modulus inner cover layer and a relatively soft, low modulus outer cover layer were disclosed by Nesbitt '193. Nesbitt teaches that a golf ball having a hard inner cover layer and soft outer cover layer, as described above, exhibit an improved coefficient of restitution ("C.O.R.") and gives a "feel" similar to that of balata. (Nesbitt, col. 1, line 65-col. 2, line 9.) In fact, Nesbitt specifically incorporates by reference the polymeric materials disclosed in Molitor '637, which include a specific grade of Estane-brand thermoplastic polyurethane as outer cover layer materials that are to be used with Nesbitt's golf ball. (Nesbitt, col. 3, lines 56-61; Molitor '637, col. 18, Examples 16-18.)

Molitor '751 also teaches that in referring to two-piece golf balls, the term "two-piece golf ball" is intended to include golf balls with separate solid layers under the outer cover layers such as the golf balls disclosed by Nesbitt. (Molitor '751, col. 3, lines 7-12.)

Those skilled in the art knew that golf balls including a hard, high-modulus inner cover layer and a soft, low-modulus outer cover layer provided a durable golf ball that exhibited properties similar to a balata-covered golf ball and was acceptable to most professional golfers.

**3. Golf Ball Designers Knew that the Selection of the Type of Materials for Inner and Outer Cover Layers was Dictated Primarily by the Mechanical Properties of the Materials**

As the inventor of the '156 patent admitted in 1994, particular materials used in the construction of the golf ball did not matter as much as the mechanical properties of those materials.<sup>6</sup> Particularly, Michael Sullivan wrote:

**Construction (i.e., simply wound versus 2-piece) no longer dictates performance. The critical design parameters are not whether the core is wound, solid, liquid filled, or balata or Surlyn covered but rather the hardness, thickness, and dynamic mechanical properties of the cover, the flexural properties of the ball, and size of the ball.**

Science and Golf II: Proceedings of the World Scientific Congress of Golf, "The relationship between golf ball construction and performance," 334-39 (1994) (emphasis added) (**Exhibit G.**) That materials could be selected based more on the material properties (e.g, Shore hardness and modulus) was also recognized well before the filing date by Molitor. In a United States Patent filed March 10, 1989, Molitor taught:

**By fabricating the shell as a multi-layer laminate, its materials can be selected for tailoring the performance of the ball to a particular use or application. For example, the properties such as**

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<sup>6</sup> This is not to say that the type of material was irrelevant. As described below in Section IV.C.1, polyurethane had some well known advantages to both balata and Surlyn® and combined many of the benefits of both materials.



color, frictional bite, durability, and resistant to scuffs and cuts could be built into the outer layer. The inner layer could simply provide the desired resilience. **Further, the interior layer could be of a relatively high modulus of elasticity for increased life and resilience while the external layer could be formed of a lower modulus of elasticity for greater frictional contact with the ball striking surface of the golf club for greater bite and playability.**

(United States Patent No. 5,150,906 to Molitor ("Molitor '906") at col. 10, lines 28-39 (emphasis added) (**Exhibit H**)). Thus, based on these teachings, those skilled in the art of golf ball design in the early 1990's would have appreciated how to select materials for their mechanical properties for the various cover layers on multi-piece golf balls.

As set forth below, all of the features of the claims of the '156 patent were known in the prior art before the critical date of the claims of the '156 patent. The references relied on below raise substantial new questions of patentability with respect to the claims of the '156 patent. Therefore reexamination of the claims of the '156 patent is appropriate.

## V. PROSECUTION HISTORY OF THE '156 PATENT

The application for the '156 patent was filed on June 4, 2001 and claims priority to a number of applications many of which have gone abandoned.<sup>7</sup> The application for the '156 patent is allegedly a continuation of U.S. Patent Application No. 09/776,878 filed February 2, 2001, U.S. Patent Application No. 09/470,196 filed December 21, 1999, U.S. Patent Application No. 08/870,585 filed June 6, 1997 ("585 application") and U.S. Patent Application No. 08/556,237 filed November 9, 1995 ("237 application") and is a continuation-in-part application of U.S. Patent Application No. 08/070,510 filed June 1, 1993 ("510 application").

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<sup>7</sup> The two applications not abandoned are U.S. Patent Application Serial No. 09/470,196, which matured into U.S. Patent No. 6,210,293 and U.S. Patent Application Serial No. 09/776,878, which matured into U.S. Patent No. 6,595,873. These patents are the subject of separate reexamination requests filed concurrently with this request.

The claims of the '156 application are, at best, only entitled to the filing date of the '237 application because the '510 patent failed to enable or describe a golf ball including the claimed low-acid inner cover layer. Therefore, the effective filing date of the claims of the '156 patent can only be as early as November 9, 1995. Therefore, the § 102(b) critical date is November 9, 1994 ("critical date").

In the first office action, Examiner Gorden rejected each of the claims for obviousness-type double patenting over the claims of the '293 patent, which was one of the parent applications. (Office Action of Aug. 14, 2001.) Following the Applicant's submission of a terminal disclaimer, Examiner Gorden rejected the claims as lacking written description under 35 U.S.C. § 112 and objected to the specification as containing new matter. (Office Action of Jan. 25, 2002.) Despite the Applicant's arguments to the contrary, Examiner Gorden made this rejection final in an Office Action mailed on September 10, 2002. After submitting an amendment to the specification and presenting the original claims of the '237 application to the Examiner, the Examiner allowed the claims of the '156 patent. (Notice of Allowance Sep. 27, 2002.)

The claims of the '156 patent were not rejected under any one of the references discussed in detail in this reexamination request. Therefore, each of the references presented herein raise substantial new questions as to the patentability of the claims of the '156 patent.

## **VI. APPLICATION OF THE PRIOR ART TO THE CLAIMS OF THE '156 PATENT**

The '156 patent includes 11 claims, including independent claims 1, 4, and 8.

### **A. Claim 1**

Claim 1 of the '156 patent is an independent claim directed to "a golf ball" including a inner cover layer made of a blend of two or more low acid ionomer resins having a defined Shore D hardness. The golf ball also includes an outer cover layer over the inner cover layer. The



outer cover layer is made of a polyurethane material and has a prescribed Shore D hardness and thickness.

The golf ball as recited in claim 1 includes:

- (a) "a core;"
- (b) "an inner cover layer disposed on said core ..."
  - a. "said inner cover layer having a Shore D hardness of at least 60,"
  - b. "said inner cover layer comprising a blend of two or more low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid; and"
- (c) "an outer cover layer disposed on said inner cover layer ..."
  - a. "said outer cover layer having a Shore D hardness of about 64 or less,"
  - b. "a thickness of from about 0.010 to 0.070 inches, and"
  - c. "and comprising a polyurethane material."

The golf ball defined by claim 1 was far from novel, well before November 9, 1995. Golf balls including each and every element recited in claim 1 were taught in prior art patents prior to the effective filing date of the claims of the '156 patent.

**1. Claim 1 is anticipated by Nesbitt or in the Alternative, is Obvious Over Nesbitt in view of Molitor '637**

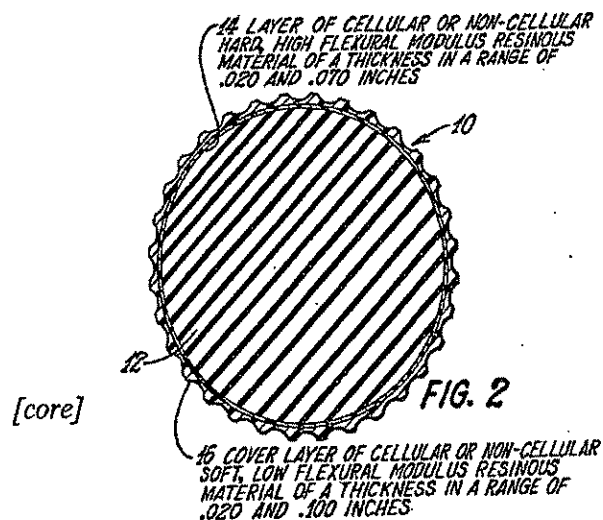
Nesbitt discloses a golf ball including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer or cover 16 of soft, low flexural modulus resin." (Nesbitt, col. 1, lines 20-25.) Nesbitt issued on February 14, 1984 and is therefore prior art to the claims of the '156 patent under 35 U.S.C. § 102(b).

One example disclosed in Nesbitt includes a hard inner cover layer of Surlyn® 1605 and a soft outer cover layer of Surlyn® 1855. Surlyn® 1605, which has been redesignated as Surlyn® 8940, has a Shore D hardness of 65 or 66. (See **Exhibit I** (Product Information Sheet for

Surlyn®); *see also* '156 patent, Table 1.) Surlyn® 1855, now designated as Surlyn® 9020, has a Shore D hardness of 55. (Exhibit I.) Nesbitt makes clear, however, that these cover materials are merely exemplary. (Nesbitt, col. 2, lines 37, 45 (stating that materials "such as" Surlyn® resins may be used); col. 3, lines 21, 25 (same).)

As a further indication that Nesbitt's disclosure was not limited to the use of Surlyn® ionomers, Nesbitt incorporates the "polymeric materials" taught by the Molitor '637 patent by reference.<sup>8</sup> (Nesbitt, col. 3, lines 56-61.) Molitor '637 teaches a limited number of polymeric materials for outer cover layers of golf balls, including polyurethane. (Molitor '637, col. 5, lines 33-55; cols. 18-19, examples 16-19.) Therefore, Molitor's polyurethane is incorporated by reference into Nesbitt as an outer cover layer as if it were part of Nesbitt's original disclosure.

Figure 1 from the Nesbitt patent shows the various layers of the multi-piece golf ball taught by Nesbitt:



<sup>8</sup> Where a prior art reference makes specific reference to an aspect of a second prior art reference, the second reference is to be treated as part of the disclosure of the first reference. *See Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1329 (Fed. Cir. 2001). Moreover, the words "incorporate by reference" are not required to incorporate a second reference into the first reference. *See In re Fried*, 329 F.2d 323 (CCPA 1964) (finding that the following statement to be an effective incorporation by reference: "The [...] steroid reactants can be prepared as disclosed in the applications of Josef Fried, Serial Nos. 489,769 and 515,917, filed February 21, 1955, and June 24, 1955, respectively.")

Claim 1	Nesbitt
A golf ball comprising:	"The disclosure embraces a <b>golf ball</b> and method of making same ...." (Nesbitt, Abstract; FIGS 1 & 2.)
a core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a <b>solid center or core</b> formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere." (Nesbitt, col. 2, lines 31-34.)
an inner cover layer disposed on said core,	" <b>Disposed on the spherical center or core 12</b> is a first layer, lamination, ply or <b>inner cover 14</b> of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, lines 34-37.)
said inner cover layer having a Shore D hardness of at least 60,	<u>Nesbitt</u> : "[I]nner cover 14 of molded hard, high flexural modulus resinous material such as <b>type 1605 Surlyn® marketed by E.I DuPont de Nemours.</b> " (Nesbitt, col. 2, lines 36-38.) <u>Per the '156 Patent</u> : "Type 1605 Surlyn® (now designated Surlyn® 8940)." ('156 patent, col. 2, lines 46-48.) <u>DuPont Surlyn® Product Information</u> : <sup>9</sup> Surlyn® 8940 (formerly Surlyn® 1605) has a Shore D hardness of 65.
said inner cover layer comprising a blend of two or more low acid ionomer resins, each containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid; and	<u>Nesbitt Incorporates the Materials of Molitor '637 by Reference</u> : "Reference is made to the application Ser. No. 155,658 of <b>Robert P. Molitor</b> issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, lines 54-60.) <u>Molitor '637</u> : Molitor teaches, in examples 1-7, cover materials including a blend of two ionomer resins: Surlyn 1605 and Surlyn 1557. (Molitor '637, col. 14, line 22 to col. 16, line 34.)
an outer cover layer disposed on said inner cover layer,	"An <b>outer layer, ply, lamination or cover 16</b> ... is then <b>remolded onto the inner ply or layer 14....</b> " (Nesbitt, col. 2, lines 43-47.)
said outer cover layer having a	<u>Nesbitt</u> : Nesbitt teaches an outer cover layer made of

<sup>9</sup> See Exhibit I.

Claim 1	Nesbitt
Shore D hardness of about 64 or less,	<p>Surlyn® 1855 (now Surlyn® 9020) that has a Shore D hardness of 55.<sup>10</sup></p> <p><b><u>Nesbitt Incorporates the Materials of Molitor '637 by Reference:</u></b></p> <p>"Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, lines 54-60.)</p> <p><b><u>Molitor '637:</u></b> Teaches the use of Estane 58133 in Examples 16 and 17. (Molitor '637, col. 18.) Estane is a soft polyurethane material that inherently has a Shore D hardness of 55.<sup>11</sup></p>
a thickness of from about 0.01 to about 0.07 inches,	<p>"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as Surlyn type 1855, may be in the range of 0.020 inches and 0.100 inches." (Nesbitt, col. 3, lines 22-25.)</p>
and comprising a polyurethane material.	<p><b><u>Molitor '637:</u></b> Estane 58133 is polyurethane material. (Molitor '637, col. 18.)</p>

Therefore, Nesbitt anticipates claim 1 because: (1) Nesbitt incorporates the relatively soft Estane 58133 polyurethane of Molitor '637 and (2) the Estane 58133 polyurethane material inherently has a Shore D hardness of 55, well within the claimed range. See M.P.E.P. §§ 2163.07 (incorporation by reference permitted); 2131.01 (multiple reference § 102 rejection appropriate when showing aspect of another reference is inherent).

Additionally the alleged invention recited in claim 1 would have been obvious to those skilled in the art at the time of the alleged invention. For example, Nesbitt provides express motivation to incorporate the soft polyurethane material disclosed in Molitor '637 as the soft outer cover layer by its specific reference to the Molitor '637 "polymeric materials." (Nesbitt,

<sup>10</sup> See Exhibit I.

<sup>11</sup> See Exhibit J (Estane 58133 Product Specification Sheet).

col. 3, lines 51-61.) Prior to the alleged invention, polyurethane was known to have a number of advantageous properties for use in golf ball covers. (See, e.g., GB '196 at col. 1, lines 38-44; *supra* IV.C.1.)

Moreover, as recognized by the inventor of the '156 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves. (Exhibit G at 334.) In the primary example taught by Nesbitt, the outer cover layer was made of Surlyn® 1855 (now Surlyn® 9020). This material had a flexural modulus of about 14,000 psi and a Shore D hardness of 55. (See Exhibit I.) The Estane 58133 thermoplastic polyurethane taught by Molitor '637 is likewise a relatively soft, low modulus material. For example, the Estane 58133 polyurethane has a flexural modulus of 25,000 psi and a Shore D hardness of 55. (See Exhibit J.) Thus, the ordinarily skilled golf ball designer would have readily appreciated the substitutability of Nesbitt's Surlyn® 1855 and Molitor '637's Estane 58133.

Accordingly, Nesbitt teaches every limitation of claim 1, and thereby anticipates claim 1 under 35 U.S.C. § 102(b) and/or renders claim 1 obvious under 35 U.S.C. § 103(a) when taken in view of Molitor '637. Therefore, Nesbitt and its incorporation of Molitor '637 raise substantial new questions of patentability with respect to claim 1 that were not previously considered by the PTO. Therefore, reexamination of the '156 patent is proper.

## **2. Claim 1 is obvious over Nesbitt in view of Wu**

While Nesbitt discloses a particular soft, low modulus polyurethane material (i.e., Estane 58133) for use in a golf ball cover layer, it also would have been obvious to use the polyurethane taught by Wu as a golf ball cover at the time of the alleged invention. Nesbitt teaches a multi-layer golf ball having an outer cover layer made of a soft polymeric material such as Molitor '637's Estane 58133 polyurethane material.

Wu teaches that:

*The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.*

*It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.*

(Wu at col. 1, lines 36-46 (emphasis added).) Therefore, it would have been obvious to modify the golf ball disclosed in Nesbitt to include an outer cover layer including Wu's soft polyurethane material because it would exhibit similar material properties while providing a golf ball having the "click" and "feel" of a balata-covered ball.

This rationale was adopted by the BPAI in a related application in affirming an Examiner's rejection of a similar claim. The BPAI held:

In applying the test for obviousness<sup>9</sup> we conclude that the teachings of Wu clearly would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to achieve the expected benefits therefrom taught by Wu (i.e., to have the "click" and "feel" of balata; improved shear resistance and cut resistance; durability; and resiliency). Thus, it would have been obvious to one skilled in the art to have modified Nesbitt's three-piece golf ball having a spherical core, an inner layer of type 1605 Surlyn® and an outer layer of type 1855 Surlyn® by replacing the type 1855 Surlyn® in the outer layer with polyurethane as suggested and taught by Wu.

(*Ex Parte Sullivan*, PTO Bd. Of Patent App. & Int., Jan. 30, 2004 (decision in U.S. Patent Application Serial No. 08/873,594) (footnote omitted) (Exhibit K).)



Moreover, as recognized by the inventor himself, the particular materials used in the golf balls were not as important as the mechanical properties of those layers. (See Exhibit G at 334.) The Surlyn® 1855 (now Surlyn® 9020) taught in Nesbitt's primary example has a Shore D hardness of 55 and a flexural modulus of about 14,000 psi. Wu's polyurethane material has a Shore D hardness of 58 as measured on the surface of the golf ball. (Exhibit C (showing that the polyurethane material used as the outer cover layer on the Titleist Professional™ golf ball has a Shore D hardness of 58); see Decl. of Jeffrey L. Dalton at ¶ 6.) In addition to being soft, Wu's polyurethane is a relatively low flexural modulus material. For example, this material has a flexural modulus of about 23,000 psi when measured in accordance with ASTM standards. (Decl. of Jeffrey L. Dalton at ¶ 7.) This is very similar to the hardness of the Surlyn® 1855 used in one example taught by Nesbitt. Thus, those skilled in the art would have been led to substitute the polyurethane of Wu for the soft ionomer cover layer of Nesbitt because such would give the same or improved playability properties and would improve durability properties.

Therefore, it would have been obvious to modify the golf ball of Nesbitt to include the polyurethane disclosed by Wu because it provides a golf ball having an improved "click" and "feel" and exhibits improved cut and shear resistance when compared to balata- or ionomer-covered golf balls. Thus, claim 1 is obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Wu.

Therefore, claim 1 is obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Wu. These references raise substantial new questions of patentability that were not previously decided by the PTO. Therefore, reexamination of claim 1 of the '156 patent is proper.

### 3. Claim 1 is Obvious over Nesbitt in view of Molitor '751

Claim 1 is also obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Molitor '751. While Nesbitt describes the use of a soft outer cover layer including a polyurethane material (i.e.,

the Estane 58133 of Molitor '637), it also would have been obvious to include the relatively soft outer cover layer taught by Molitor '751 as the outer cover layer of the Nesbitt golf ball.

Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core **a cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a **thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 explains that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, **but also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt**, and other balls having non-wound cores.

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Molitor '751 explains that the advantages of using the cover including soft polyurethane material on a two-piece golf ball, such as the golf ball of Nesbitt, include "playability properties as good or better than balata-covered wound balls "resulting in golf balls that" are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19, **Exhibit L**.) A cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.



Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft outer cover layer of Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Nesbitt when taken in view of Molitor '751 render claim 1 obvious under 35 U.S.C. § 103(a). These references raise substantial new questions of patentability that were not previously considered by the PTO. Therefore, reexamination of claim 1 of the '156 patent is proper.

#### **4. Claim 1 is Obvious Over Proudfit in View of Molitor '637**

As discussed above, the effective filing date of the claims of the '156 patent, including claim 1, is November 9, 1995. Because Proudfit was published on May 24, 1994, more than one year prior to the effective filing date of the claims of the '156 patent, Proudfit is prior art under 35 U.S.C. § 102(b) and should not have been antedated with a Rule 1.131 declaration. See M.P.E.P. § 715. Prior to the Proudfit patent being improperly antedated, Examiner Graham had indicated that Proudfit taught all of the limitations of the claims except for a polyurethane material.

Proudfit discloses a three-piece solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata-based material. (Proudfit, Abstract; col. 5, lines 43-52.) Proudfit teaches that: "A number of golfers, primarily professional and low handicap golfers, prefer balata covered balls because of the higher spin rate, control, "feel," and "click" which balata provides." (Proudfit, col. 1, lines 49-52.) While Proudfit may

not disclose the use of a polyurethane material in the outer cover it would have been obvious to modify Proudfit to include an outer cover including a polyurethane material rather than the balata disclosed therein. Moreover, polyurethane has advantages over both balata and Surlyn as would have been readily appreciated by those skilled in the art prior to the critical date.

Proudfit's teachings are illustrated in the following claim chart:

Claim 1	Proudfit								
A golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)								
a core;	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a <b>solid core 11</b> and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)</p> <p>"Two specific <b>solid core compositions</b> used with the new two-layer cover had the composition described in Table 1. <b>One core</b> was used in a golf ball which was designated as a 90 compression ball, and <b>the other core</b> was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)</p>								
an inner cover layer disposed on said core,	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins</b> and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)								
said inner cover layer having a Shore D hardness of at least 60,	<p>"The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(col. 8, lines 22-30.)</p> <p>Surlyn® 8940 has a Shore D hardness of 65; Surlyn® 9910 has a Shore D hardness of 64 (Exhibit I.)</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								

Claim 1	Proudfit								
	Therefore, this cover blend has a hardness of 60 or more. (See Decl. of Edmund A. Hebert at ¶¶ 8-9.)								
said inner cover layer comprising a blend of two or more low acid ionomer resins, each containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid; and	<p>"The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(col. 8, lines 22-30.) Surlyn® 8940 and Surlyn® 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
an outer cover layer disposed on said inner cover layer,	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)								
said outer cover layer having a Shore D hardness of about 64 or less,	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) This material inherently has a Shore D hardness of less than 64.								
a thickness of from about 0.01 to about 0.07 inches,	The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (col. 7, lines 40-46.)								
and comprising a polyurethane material.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.)								

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material, it would have been obvious given that "[t]he patent literature is replete with proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane...." (Molitor '751 patent, col. 2, lines 9-12.)

For example, Molitor '637 discloses the use of polyurethane material as a soft polymeric material that may be used as an outer cover layer of a golf ball. (See Molitor '637, col. 5, lines 33-41; col. 18, Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material includes Estane 58133.

As was readily appreciated by those skilled in the art—including the inventor of the '156 patent—the types of materials used in a golf ball are not as critical to a golf ball's playability as are the mechanical properties of those materials. (See **Exhibit G** at 334.) The Estane 58133 is a relatively soft material and has a Shore D hardness of 55 and is also a low flexural modulus material having a modulus of about 25,000 psi. (See **Exhibit J**.) Proudfit's outer cover layer is also relatively soft and has a flexural modulus between 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Due to the similarities between these two materials, the ordinarily skilled artisan would have recognized the substitutability of these two materials as well as the benefits of using polyurethane as an outer cover material.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the polyurethane outer cover layer of Molitor '637 because polyurethane was a well known substitute to balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability when compared to balata; (3) cost-effectiveness when compared to balata; and (4) having a good "click" and "feel." (See *supra* Part IV.C.1.) All of this would have led one of ordinary skill in the art to replace the soft balata-based outer cover layer of Proudfit with the soft polyurethane outer cover layer material of Molitor '637 at the time of the alleged invention.

Therefore, Proudfit when taken in view of Molitor '637 renders claim 1 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously decided by the PTO, reexamination of claim 1 of the '156 patent is proper.

### 5. Claim 1 is Obvious Over Proudfit in View of Wu

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer of a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the soft balata-based outer cover layer of Proudfit to include the soft polyurethane material taught by Wu.

Wu teaches that:

*The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.*

*It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.*

(Wu at col. 1, lines 36-46 (emphasis added).)

As the inventor of the '156 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (Exhibit G at 334.) Additionally, Wu's polyurethane material inherently has a flexural modulus of about 23,000 psi when measured in accordance with ASTM standards. (Decl. of Jeffrey L. Dalton at ¶ 7.) Proudfit's outer cover layer material has a flexural modulus of between about 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Thus, one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

Based on Wu's teachings, one of ordinary skill in the art would have recognized the substitutability of soft polyurethane for soft balata-based materials and the advantages of making such a substitution. These advantages include (1) low price compared to balata; (2) better cut resistance when compared to balata; and (3) a "click" and "feel" that is similar to balata. Moreover, the replacing the balata-material taught by Proudfit would have been obvious to those skilled in the art prior to November 9, 1995 because before that time, the Titleist Professional™ golf ball, which had used Wu's polyurethane material, had replaced balata-covered balls as the market leader. (See Decl. of Jeffrey L. Dalton at ¶¶ 3-4.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the soft balata-based outer cover layer with an outer cover layer made of soft polyurethane material because polyurethane provides numerous advantages over balata while exhibiting the "click" and "feel" of balata.

Therefore, Proudfit when taken in view of Wu renders claim 1 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 1 of the '156 patent is proper.

**6. Claim 1 is Obvious Over Proudfit in View of Molitor '751**

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's golf ball by replacing the balata-based outer cover layer with an outer cover layer including a soft polyurethane material as taught by Molitor '751.

Molitor '751 teaches that:



It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core **a cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) **a thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 explains that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, **but also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt**, and other balls having non-wound cores.

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (attached hereto as **Exhibit L.**) Therefore, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with the outer cover layer including a soft polyurethane material as taught by of Molitor '751 to provide golf balls that have "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Proudfit when taken in view of the teachings of Molitor '751 render claim 1 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not decided during examination, reexamination of the '156 patent is proper.

## B. Claim 2

Claim 2 of the '156 patent depends from claim 1. Claim 2 further limits the outer cover layer thickness of the golf ball. Particularly, claim 2 limits the outer cover layer thickness from about 0.01 to about 0.05 inches. Golf balls having the claimed thickness were well known in the art well before the critical date of the '156 patent and therefore, no such golf ball was or is patentable.

### 1. Nesbitt Teaches all of the Elements of Claim 2

Nesbitt teaches a golf ball having the claimed outer cover layer thickness. Nesbitt teaches each element of claim 2 as shown by the following chart:

Claim 2	Nesbitt
The golf ball of claim 1	See above, Sections VI.A.1 to VI.A.3.
wherein said outer cover layer has a thickness of from about 0.01 to about 0.05 inches.	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as Surlyn type 1855, may be in the range of 0.020 inches and 0.100 inches." (col. 3, lines 22-25.)



Therefore, Nesbitt teaches each and every element of claim 2 and anticipates claim 2 under 35 U.S.C. § 102(b). Alternatively, claim 2 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 2 invalid under 35 USC §§ 102(b), 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 2 that were not previously considered by the PTO. Therefore reexamination of claim 2 of the '156 patent is proper.

## 2. Proudfit in Combination with Other References Teach All of the Limitations of Claim 2

Proudfit teaches a golf ball having the claimed outer cover layer thicknesses. Proudfit's teachings are illustrated by the following claim chart:

<b>Claim 2</b>	<b>Proudfit</b>
The golf ball of claim 1	See above, Sections VI.A.4 to VI.A.6.
wherein said outer cover layer has a thickness of from about 0.01 to about 0.05 inches.	"The <b>thickness of the outer layer</b> can be within the range of about <b>0.0450 to 0.0650 inch</b> to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an <b>outer layer thickness of 0.0525 inch....</b> " (col. 7, lines 40-46.)

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 raise substantial new questions of patentability with respect to claim 2 that were not previously considered by the PTO. Therefore, reexamination of claim 2 of the '156 patent is proper.

## C. Claim 3

Claim 3 of the '156 patent depends directly from claim 1. Claim 3 further limits the outer cover layer thickness of the golf ball. Particularly, claim 3 limits the outer cover layer thickness

from about 0.03 to about 0.06 inches. Golf balls having the claimed thickness were well known in the art well before the critical date of the '156 patent and therefore, no such golf ball was or is patentable.

### 1. Nesbitt Teaches All of the Elements of Claim 3

Nesbitt teaches each element of claim 3 as shown by the following chart:

Claim 3	Nesbitt
The golf ball of claim 1	See above, Sections VI.A.1 to VI.A.6.
wherein said outer cover layer has a thickness of from about 0.03 to about 0.06 inches.	<p>"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as Surlyn type 1855, may be in the range of 0.020 inches and 0.100 inches." (col. 3, lines 22-25.)</p> <p>"The outer layer of the soft resin is of a thickness of 0.0575 inches." (col. 3, lines 39-40.)</p>

Therefore, Nesbitt teaches each and every element of claim 3 and anticipates claim 3 under 35 U.S.C. § 102(b). Alternatively, claim 3 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 3 invalid under 35 USC §§ 102(b), 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 3 that were not previously considered by the PTO. Therefore, reexamination of claim 3 of the '156 patent is proper.

### 2. Proudfit in Combination with Other References Teach All of the Limitations of Claim 3

Proudfit teaches a golf ball that exhibits the properties required by claim 3:

Claim 3	Proudfit
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Claim 3	Proudfit
The golf ball of claim 1	See above, Sections VI.A.4 to VI.A.6.
wherein said outer cover layer has a thickness of from about 0.03 to about 0.06 inches.	"The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (col. 7, lines 40-46.)

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 raise substantial new questions of patentability with respect to claim 3 that were not previously considered by the PTO. Therefore reexamination of claim 1 of the '156 patent is proper.

#### D. Claim 4

Claim 4 of the '156 patent is an independent claim directed to a golf ball including a core, and an inner cover layer made of a blend of two or more low-acid ionomer resins. The inner cover layer also has a prescribed Shore D hardness. The golf ball also includes an outer cover layer made of a polyurethane material and having a prescribed thickness.

The golf ball as recited in claim 4 includes:

- (a) "a core;"
- (b) "an inner cover layer disposed about said core,"
  - a. "said inner cover layer having a Shore D hardness of at least 60,"
  - b. "said inner cover layer comprising a blend of two or more ionomeric resins, each containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid; and"
- (c) "an outer cover layer disposed on said inner cover layer, "
  - a. "said outer cover layer having a thickness of from about 0.01 to about 0.07 inches,"
  - b. "and comprising a polyurethane material."

The golf ball defined by claim 4 was far from novel, well before November 9, 1995. Golf balls including each and every element recited in claim 4 were taught in prior art patents and/or were obvious to those skilled in the art prior to the effective filing date of the claims of the '156 patent.

**1. Claim 4 is Anticipated by Nesbitt or in the or in the Alternative, is Obvious Over Nesbitt in view of Molitor '637<sup>12</sup>**

Nesbitt discloses a golf ball including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer or cover 16 of soft ... resin." (Nesbitt, col. 1, lines 20-25.) Nesbitt issued on February 14, 1984 and is therefore prior art to the claims of the '156 patent under 35 U.S.C. § 102(b).

One specific example of a multi-layer golf ball disclosed in Nesbitt includes an inner cover of Surlyn® 1605 and an outer cover made of Surlyn® 1855. Surlyn® 1605, which has been redesignated as Surlyn® 8940 has a Shore D hardness of 65 and exhibits a flexural modulus of about 51,000 psi. (See Exhibit I (Product Information Sheet for Surlyn®); see also '156 patent, col. 2, lines 46-51, Table 1.) Surlyn® 1855, now designated as Surlyn® 9020 has a Shore D hardness of 55. (Exhibit I.) As Nesbitt makes clear, however, these cover materials are merely exemplary. (Nesbitt, col. 2, lines 37, 45 (stating that materials "such as" Surlyn® resins may be used); col. 3, lines 21, 25 (same).)

As a further indication that Nesbitt's disclosure was not limited to the use of Surlyn® ionomers, Nesbitt incorporates the "polymeric materials" taught by the Molitor '637 patent by reference.<sup>13</sup> (Nesbitt, col. 3, lines 56-61.) Molitor '637 teaches a limited number of polymeric

<sup>12</sup> Much of the analysis presented with respect to claims 1-3 has been substantially repeated for the benefit of the Examiner for the remainder of the claims 4-8. This repetition is not intended to burden the Examiner but rather to assist the Examiner in reviewing this request in light of the new image file wrapper system and to avoid the need for repeated cross referencing throughout this request.

<sup>13</sup> See *supra* footnote 9.

materials for use as golf ball cover layers, including soft polyurethane materials. (Molitor '637, col. 5, lines 33-55; cols. 18-19, Examples 16-19.) Therefore, Molitor '637's soft polyurethane cover material is incorporated by reference into Nesbitt as an outer cover layer as if it were part of the original disclosure.

Nesbitt teaches a golf ball having the properties required by claim 4 as illustrated by the following chart:

<b>Claim 4</b>	<b>Nesbitt</b>
A golf ball comprising:	"The disclosure embraces a <b>golf ball</b> and method of making same ...." (Nesbitt, Abstract; FIGS 1 & 2.)
a core:	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a <b>solid center or core</b> formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere." (Nesbitt, col. 2, lines 31-34.)
an inner cover layer disposed about said core,	"[A] center or core 12 ... is <b>molded with a layer of hard, high modulus Surlyn resin</b> , such as Surlyn type 1605..." (Nesbitt, col. 3, lines 27-29.)
said inner cover layer having a Shore D hardness of at least 60,	"[I]nner cover 14 of molded <b>hard, highly flexural modulus resinous material</b> such as <b>type 1605 Surlyn®</b> marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, lines 36-38.)  <b><u>DuPont Surlyn Product Information:</u><sup>14</sup></b>  Surlyn® 8940 (formerly 1605 (see '156 patent, col. 2, lines 46-48)) has a Shore D hardness of 65. (See Exhibit I.)
said inner cover layer comprising a blend of two or more ionomeric resins, each containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid; and	<b><u>Nesbitt Incorporates the Materials of Molitor '637 by Reference:</u></b>  "Reference is made to the application Ser. No. 155,658 of <b>Robert P. Molitor</b> issued into U.S. Pat. No. <b>4,274,637</b> which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention."

<sup>14</sup> Attached as Exhibit I.

Claim 4	Nesbitt
	(Nesbitt, col. 3, lines 54-60.)  <b>Molitor '637:</b> Molitor teaches, in examples 1-7, cover materials including a blend of two ionomer resins: Surlyn 1605 and Surlyn 1557. (Molitor '637, col. 14, line 22 to col. 16, line 34.)
an outer cover layer disposed on said inner cover layer,	"An outer layer, ply, lamination or cover 16 ... is then remolded onto the inner ply or layer 14...." (col. 2, lines 43-47.)
said outer cover layer having a thickness of from about 0.01 to about 0.07 inches,	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as Surlyn type 1855, may be in the range of 0.020 inches and 0.100 inches." (Nesbitt, col. 3, lines 22-25.)
and comprising a polyurethane material.	<b>Molitor '637:</b> Estane 58133 is a "relatively soft polyurethane material." (Molitor '637, col. 18.)

Therefore, Nesbitt anticipates claim 4 because: (1) Nesbitt incorporates the relatively soft Estane 58133 polyurethane of Molitor '637 and (2) the Estane 58133 polyurethane material inherently has a Shore D hardness of 55, well within the claimed range. *See* M.P.E.P. §§ 2163.07 (incorporation by reference permitted); 2131.01 (multiple reference § 102 rejection appropriate when showing an aspect of a primary reference is inherent).

Additionally, the alleged invention recited in claim 4 would have been obvious to those skilled in the art at the time of the alleged invention. For example, Nesbitt provides express motivation to incorporate the soft polyurethane material disclosed in Molitor '637 as the soft outer cover layer by its specific reference to Molitor '637's "polymeric materials." (Nesbitt, col. 3, lines 51-61.) Prior to the alleged invention, polyurethane was known to have a number of advantageous properties for use in golf ball outer cover layers. (*See, e.g.*, GB '196, col. 1, lines 38-44; *supra* IV.C.1.)

Moreover, as recognized by the inventor himself, the particular materials used in the golf balls were not as important as the mechanical properties of those layers. (*See Exhibit G* at 334.)



Furthermore, the relatively soft polyurethane material taught by Molitor '637 and the relatively soft ionomer inner cover layer taught by Nesbitt have similar mechanical properties including an identical Shore D hardness of 55 and a similar, relatively low flexural modulus of 25,000 and 14,000 psi, respectively. (*Compare Exhibit I with Exhibit J.*) This would have further suggested to those skilled in the art that the soft polymeric materials taught by Molitor, including, for example, the relatively soft polyurethane material would have been substitutable for the soft ionomer outer cover layer in one example taught in Nesbitt.

Accordingly, Nesbitt teaches every limitation of claim 4, and thereby anticipates claim 4 under 35 U.S.C. § 102(b) and/or renders claim 4 obvious under 35 U.S.C. § 103(a) when taken in view of Molitor '637. Therefore, Nesbitt and its incorporation of Molitor '637 raise substantial new questions of patentability with respect to claim 4 that were not previously considered by the PTO. Therefore, reexamination of claim 4 of the '156 patent is proper.

## 2. Claim 4 is Obvious over Nesbitt in View of Wu

While Nesbitt discloses a particular soft, low modulus polyurethane material (i.e., Estane 58133) for use as a golf ball cover, it would have been obvious to use the polyurethane taught by Wu as a golf ball cover at the time of the alleged invention. Nesbitt teaches a multi-layer golf ball having an outer cover layer made of a soft polymeric material, such as, for example, Molitor '637's soft polyurethane material.

Wu teaches that:

*The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.*

*It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls,*

*polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.*

(Wu at col. 1, lines 36-46 (emphasis added).) Therefore, it would have been obvious to modify the golf ball disclosed in Nesbitt to include an outer cover made of Wu's soft polyurethane material because it would exhibit an improved cut resistance over Surlyn or balata cover layers while providing a golf ball having the "click" and "feel" of a balata-covered ball. This rationale was adopted by the BPAI in a related application in affirming an Examiner's rejection of a related claim. The BPAI held:

In applying the test for obviousness<sup>6</sup> we conclude that the teachings of Wu clearly would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to achieve the expected benefits therefrom taught by Wu (i.e., to have the "click" and "feel" of balata; improved shear resistance and cut resistance; durability; and resiliency). Thus, it would have been obvious to one skilled in the art to have modified Nesbitt's three-piece golf ball having a spherical core, an inner layer of type 1605 Surlyn® and an outer layer of type 1855 Surlyn® by replacing the type 1855 Surlyn® in the outer layer with polyurethane as suggested and taught by Wu.

(*Ex Parte Sullivan*, PTO Bd. Of Patent App. & Int. at 11, Jan. 30, 2004 (decision in U.S. Patent Application Serial No. 08/873,594) (Exhibit K).)

Moreover, as recognized by the inventor himself, the particular materials used in the golf balls were not as important as the mechanical properties of those layers. (See Exhibit C.) Wu's polyurethane material has a Shore D hardness of 58 as measured on the surface of the golf ball and a flexural modulus of about 23,000 psi when measured in accordance with ASTM standards. (Exhibit C; see Decl. of Jeffrey L. Dalton at ¶¶ 6-7.) These are very similar properties to the Surlyn® 1855 used in one example taught by Nesbitt. Thus, those skilled in the art would have been led to substitute the polyurethane of Wu for the soft ionomer cover layer of Nesbitt because



such would give the same or improved playability properties and would exhibit improved durability properties.

Thus, those skilled in the art would have been led to substitute the polyurethane of Wu for the soft ionomer cover layer of Nesbitt because such would give the same or improved playability properties and durability properties. Additionally, it would have been obvious to modify the golf ball of Nesbitt to include an outer cover layer using the polyurethane disclosed by Wu because it provides a golf ball having a good "click" and "feel" and exhibits improved shear resistance and cut resistance when compared to balata-covered balls.

Therefore, claim 4 is obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Wu. These references raise substantial new questions of patentability that were not previously considered by the PTO. Therefore, reexamination of claim 4 of the '156 patent is proper.

### 3. Claim 4 is Obvious over Nesbitt in view of Molitor '751

In addition to being anticipated by Nesbitt, claim 4 is also obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Molitor '751. While Nesbitt describes an outer cover layer including a soft polyurethane material (i.e., the Estane 58133 of Molitor '637), it would have been obvious to include the relatively soft outer cover layer taught by Molitor '751, which includes a polyurethane-based material as the outer cover layer of the Nesbitt golf ball for the reasons provided by Molitor '751.

Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a Shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 explains that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but **also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls having non-wound cores.**

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Molitor explains that the advantages of using this cover on a two-piece golf ball, such as the golf ball of Nesbitt, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19, **Exhibit L**.) Therefore, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft outer cover layer of Nesbitt and replace it with an outer cover made of the soft polyurethane materials taught by Molitor '751 to provide a golf ball that exhibits "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Nesbitt when taken in view of Molitor '751 render claim 4 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability which were not previously considered by the PTO, reexamination of claim 4 of the '156 patent is proper.

4. **Claim 4 is Obvious Over Proudfit in View of Molitor '637**

Proudfit discloses a three-piece solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata or balata-based material. (Proudfit, Abstract; col. 5, lines 43-52.) Proudfit teaches that: "A number of golfers, primarily professional and low handicap golfers, prefer balata covered balls because of the higher spin rate, control, "feel," and "click" which balata provides." (Proudfit, col. 1, lines 49-52.) While Proudfit may not disclose the use of a polyurethane outer cover, it would have been obvious to modify Proudfit to include an outer cover made of polyurethane rather than the balata material disclosed therein because Proudfit seeks to solve the same problems associated with Surlyn-covered golf balls that polyurethane had been used to solve for years. Moreover, polyurethane has advantages over both balata- and Surlyn-covered golf balls as would have been readily appreciated by those skilled in the art prior to the critical date.

Proudfit's teachings are illustrated in the following claim chart:

<b>Claim 4</b>	<b>Proudfit</b>
A golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a core:	"FIG. 1 illustrates a two-piece golf ball 10 which includes a <b>solid core 11</b> and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, lines 21-

Claim 4	Proudfit								
	<p>24.)</p> <p>"Two specific <b>solid core compositions</b> used with the new two-layer cover had the composition described in Table 1. <b>One core</b> was used in a golf ball which was designated as a 90 compression ball, and <b>the other core</b> was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)</p>								
an inner cover layer disposed about said core,	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a <b>solid core 11</b> and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)</p>								
said inner cover layer having a Shore D hardness of at least 60,	<p>"The composition of the inner cover layer is described in Table 6."</p> <table border="1"> <caption>TABLE 6</caption> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th> </tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(col. 8, lines 22-30.)</p> <p>Surlyn® 8940 has a Shore D hardness of 65; Surlyn® 9910 has a Shore D hardness of 64 (<b>Exhibit I</b>). Therefore, this cover blend has a hardness of 60 or more. (See Decl. of Edmund A. Hebert at ¶¶8-9.)</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
said inner cover layer comprising a blend of two or more ionomeric resins, each containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid; and	<p>"The composition of the inner cover layer is described in Table 6."</p> <table border="1"> <caption>TABLE 6</caption> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th> </tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(col. 8, lines 22-30.) Surlyn® 8940 and Surlyn® 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
an outer cover layer disposed on	<p>"FIG. 1 illustrates a two-piece golf ball 10 which</p>								

<b>Claim 4</b>	<b>Proudfit</b>
said inner cover layer,	includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)
said outer cover layer having a thickness of from about 0.01 to about 0.07 inches,	"The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (col. 7, lines 40-46.)
and comprising a polyurethane material.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.)

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material, it would have been obvious given that "[t]he patent literature is replete with proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane...." (Molitor '751 patent, col. 2, lines 9-12.) Soft polyurethane materials had been known to be a substitute for balata covers for decades prior to the filing of the '156 patent.

For example, Molitor '637 discloses the use of polyurethane material as a soft polymeric material that may be used as an outer cover layer of a golf ball. (See Molitor '637, col. 5, lines 33-41; col. 18, Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material includes Estane 58133.

As was readily appreciated by those skilled in the art—including the inventor of the '156 patent—the types of materials used in a golf ball are not as critical to a golf ball's playability as are the mechanical properties of those materials. (See **Exhibit G** at 334.) The Estane 58133 is a relatively soft material and has a Shore D hardness of 55 and is also a low flexural modulus material having a modulus of about 25,000 psi. (See **Exhibit J**.) Proudfit's outer cover layer is also relatively soft and has a flexural modulus between 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Due to the similarities between these two materials, the ordinarily skilled artisan

would have recognized the substitutability of these two materials as well as the benefits of using polyurethane as an outer cover material.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the Estane polyurethane outer cover layer of Molitor '637 because such was a well known substitute for balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability; (3) cost-effectiveness; and (4) having a good "click" and "feel." All of this would have led one of ordinary skill in the art to replace the soft balata outer cover layer of Proudfit with the soft polyurethane outer cover layer of Molitor '637 at the time of the alleged invention.

Therefore, Proudfit when taken in view of Molitor '637 renders claim 4 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 4 of the '156 patent is proper.

#### 5. Claim 4 is Obvious Over Proudfit in View of Wu

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer of a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the soft balata outer cover layer of Proudfit to include the soft polyurethane material taught by Wu.

Wu teaches that:

*The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.*



It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. *However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.*

(Wu at col. 1, lines 36-46 (emphasis added).)

As the inventor of the '156 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (Exhibit G at 334.) Additionally, Wu's polyurethane material inherently has a flexural modulus of about 23,000 psi when measured in accordance with ASTM standards. (Decl. of Jeffrey L. Dalton at ¶ 7.) Proudfit's outer cover layer material has a flexural modulus of between about 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Thus, one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

Based on Wu's teachings one of ordinary skill in the art would have recognized the substitutability of polyurethane for balata-based materials and the advantages of making such a substitution. These advantages include (1) low price compared to balata; (2) better cut resistance when compared to balata; and (3) a "click" and "feel" that is similar to balata. Moreover, the replacing the balata-material taught by Proudfit would have been obvious to those skilled in the art prior to November 9, 1995 because before that time, the Titleist Professional™ golf ball, which had used Wu's polyurethane material, had replaced balata-covered balls as the market leader. (Exhibit C.) Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with an outer cover layer made of soft polyurethane material because polyurethane provides numerous advantages over balata while exhibiting the "click" and "feel" of balata.



Therefore, Proudfit when taken in view of Wu renders claim 4 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 4 of the '156 patent is proper.

6. **Claim 4 is Obvious Over Proudfit in View of Molitor '751**

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with a soft polyurethane outer cover layer as taught by Molitor '751.

Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a **cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a **thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 explains that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but **also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt**, and other balls having non-wound cores.

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover layer

including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (**Exhibit L**.) Therefore, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 60.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with the soft outer cover layer including a soft polyurethane material as taught by Molitor '751 to provide golf balls that have "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Proudfit when taken in view of the teachings of Molitor '751 render claim 4 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 4 of the '156 patent is proper.

**E. Claim 5**

Claim 5 of the '156 patent depends directly from claim 4. Claim 5 requires that the Shore D hardness of the outer cover layer be 64 or less. Claim 5 was unpatentable at the time of alleged invention.

**1. Nesbitt Teaches all of the Elements of Claim 5**

Nesbitt teaches each element of claim 5 as shown by the following chart:

<b>Claim 5</b>	<b>Nesbitt</b>
The golf ball of claim 4 wherein said outer cover exhibits a Shore D hardness of about 64 or less.	See above, Sections VI.D.1 to VI.D.3.  <b><u>Nesbitt:</u></b> Nesbitt teaches an outer cover layer made of Surlyn® 1855 (now Surlyn® 9020) that has a Shore D hardness of 55. <sup>15</sup>  <b><u>Nesbitt Incorporates the Materials of Molitor '637 by Reference:</u></b> "Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, lines 54-60.) <b><u>Molitor '637:</u></b> Teaches the use of Estane 58133 in Examples 16 and 17. (Molitor '637, col. 18.) Estane is a soft polyurethane material that inherently has a Shore D hardness of 55. <sup>16</sup>

Therefore, Nesbitt teaches each and every element of claim 5 and therefore, anticipates claim 5 under 35 U.S.C. § 102(b). Alternatively, claim 5 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

<sup>15</sup> See Exhibit I.

<sup>16</sup> See Exhibit J.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 5 invalid under 35 U.S.C. 102(b) and/or 103(a), these references either alone or in combination raise substantial new questions that were not previously considered by the PTO. Therefore, reexamination of claim 5 of the '156 patent is proper.

**2. Proudfit in Combination with Other References Teach  
All of the Limitations of Claim 5**

Proudfit teaches a golf ball that exhibits the properties required by claim 5 as illustrated by the following chart:

<b>Claim 5</b>	<b>Proudfit</b>
The golf ball of claim 4 wherein said outer cover exhibits a Shore D hardness of about 64 or less.	See above, Sections VLD.4 to VLD.6. "... an <b>outer layer of soft material</b> such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) This material inherently has a Shore D hardness of less than 64.

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 raise substantial new questions of patentability with respect to claim 5 that were not previously considered by the PTO. Therefore, reexamination of claim 5 of the '156 patent is proper.

**F. Claim 6**

Claim 6 of the '156 patent depends directly from claim 4. Claim 6 further limits the outer cover layer thickness to from about 0.01 to about 0.05 inches. The golf ball defined by claim 6 was neither novel nor non-obvious prior to the critical date.

**1. Nesbitt Teaches all of the Elements of Claim 6**

Nesbitt teaches each element of claim 6 as shown by the following chart:

<b>Claim 6</b>	<b>Nesbitt</b>
The golf ball of claim 4 wherein said outer cover layer	See above, Sections VLD.1 to VLD.3. "The <b>thickness of the outer layer or cover</b> 16 of soft,

Claim 6	Nesbitt
has a thickness of from about 0.01 to about 0.05 inches.	low flexural modulus resin such as Surlyn type 1855, <b>may be in the range of 0.020 inches and 0.100 inches.</b> " (col. 3, lines 22-25.)

Therefore, Nesbitt teaches each and every element of claim 6 and therefore, anticipates claim 6 under 35 U.S.C. § 102(b). Alternatively, claim 6 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 6 invalid under 35 U.S.C. § 102(b) and/or § 103(a). Therefore, these references either alone or in combination raise substantial new questions as to the patentability of claim 6 that were not previously considered by the PTO. Therefore, reexamination of claim 6 of the '156 patent is proper.

## 2. Proudfit in Combination with Other References Teach All of the Limitations of Claim 6

Proudfit teaches a golf ball that exhibits the properties required by claim 6:

Claim 6	Proudfit
The golf ball of claim 4	See above, Sections VI.D.4 to VI.D.6.
wherein said outer cover layer has a thickness of from about 0.01 to about 0.05 inches.	"The <b>thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch</b> to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an <b>outer layer thickness of 0.0525 inch....</b> " (col. 7, lines 40-46.)

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 raise substantial new questions of patentability with respect to claim 6 that were not previously considered by the PTO. Therefore, reexamination of claim 6 of the '156 patent is proper.

**G. Claim 7**

Claim 7 of the '156 patent depends directly from claim 4. Claim 7 further limits the outer cover layer thickness from 0.03 to about 0.06 inches. No such golf ball was or is patentable.

**1. Nesbitt Teaches All of the Elements of Claim 7**

Nesbitt teaches all of the limitations of claim 7 as shown in the following claim chart:

<b>Claim 7</b>	<b>Nesbitt</b>
The golf ball of claim 4 wherein said outer cover layer has a thickness of from about 0.03 to about 0.06 inches.	See above, Sections VI.D.1 to VI.D.3. "The <b>thickness of the outer layer or cover 16</b> of soft, low flexural modulus resin such as Surlyn type 1855, <b>may be in the range of 0.020 inches and 0.100 inches.</b> " (col. 3, lines 22-25.)

Therefore, Nesbitt teaches each and every element of claim 7 and anticipates claim 7 under 35 U.S.C. § 102(b). Alternatively, claim 7 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 7 invalid under 35 USC §§ 102(b), 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 7. Therefore reexamination of claim 7 of the '156 patent is proper.

**2. Proudfit in Combination with Other References Teach All of the Elements of Claim 7**

Proudfit teaches all of the limitations of claim 7 as shown in the following claim chart:

<b>Claim 7</b>	<b>Proudfit</b>
The golf ball of claim 4	See above, Sections VI.D.4 to VI.D.6.

Claim 7	Proudfit
wherein said outer cover layer has a thickness of from about 0.03 to about 0.06 inches.	"The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (col. 7, lines 40-46.)

### H. Claim 8

Claim 8 of the '156 patent is an independent claim limited to a golf ball. The golf ball defined by claim 8 includes a core and an inner cover layer disposed over the core. The inner cover layer is made of a low-acid ionomer resin and has a prescribed Shore D hardness and flexural modulus. An outer cover layer is disposed over the inner cover layer. The outer cover layer is made of polyurethane material and has a prescribed thickness.

The golf ball as recited in claim 8 includes:

- (a) "a core;"
- (b) "an inner cover layer disposed on said core,"
  - c. "said inner cover layer having a Shore D hardness of about 60 or more,"
  - d. "said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid"
  - e. "and having a modulus of from about 15,000 to about 70,000 psi; and"
- (c) "an outer cover layer disposed about said inner cover layer,"
  - c. "said outer cover layer having a thickness of from about 0.01 to about 0.07 inches,"
  - d. "and comprising a polyurethane material."

The golf ball defined by claim 8 was far from novel, well before November 9, 1995. Golf balls including each and every element recited in claim 8 were taught in prior art patents and/or



were obvious to those skilled in the art prior to the effective filing date of the claims of the '156 patent.

**1. Claim 5 is Anticipated by Nesbitt or in the Alternative, is Obvious Over Nesbitt in View of Molitor '637**

As discussed above, Nesbitt discloses a golf ball including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer or cover 16 of soft, low flexural modulus resin." (Nesbitt, col. 1, lines 20-25.) Nesbitt is prior art to the claims of the '156 patent under § 102(b).

One example of the golf ball taught by Nesbitt includes a hard inner cover layer made of Surlyn® 1605 and a soft outer cover layer of Surlyn® 1855. One example disclosed in Nesbitt includes a hard inner cover layer of Surlyn® 1605 and a soft outer cover layer of Surlyn® 1855. Surlyn® 1605, which has been redesignated as Surlyn® 8940 has a Shore D hardness of 65 or 66. (See **Exhibit I** (Product Information Sheet for Surlyn®); see also '156 patent, Table 1.) Surlyn® 1855, now designated as Surlyn® 9020 has a Shore D hardness of 55. (**Exhibit I**.) As Nesbitt makes clear, however, these cover materials are merely exemplary. (Nesbitt, col. 2, lines 37, 45 (stating that materials "such as" Surlyn® resins may be used); col. 3, lines 21, 25 (same).)

As a further indication that Nesbitt's disclosure was not limited to the use of Surlyn® ionomers, Nesbitt incorporates the "polymeric materials" taught by Molitor '637 patent by reference. (Nesbitt, col. 3, lines 56-61.) Molitor '637 teaches a limited number of polymeric materials for cover layers for golf balls—including polyurethane. (Molitor '637, col. 5, lines 33-55; cols. 18-19, examples 16-19.) Therefore, Molitor '637's polyurethane is incorporated into Nesbitt as an outer cover layer as if it were part of Nesbitt's original disclosure.<sup>17</sup>

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<sup>17</sup> See *supra* footnote 9.

Nesbitt, by its incorporation of Molitor '637, teaches each and every element of claim 5 either explicitly or inherently as set forth in the following claim chart:

Claim 8	Nesbitt
A golf ball comprising:	"The disclosure embraces a <b>golf ball</b> and method of making same ...." (Nesbitt, Abstract; FIGS 1 & 2.)
a core:	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a <b>solid center or core</b> formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere." (Nesbitt, col. 2, lines 31-34.)
an inner cover layer disposed on said core,	" <b>Disposed on the spherical center or core 12</b> is a first layer, lamination, ply or <b>inner cover 14</b> of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, lines 34-37.)
said inner cover layer having a Shore D hardness of about 60 or more,	"[I]nner cover 14 of molded hard, highly flexural modulus resinous material such as <b>type 1605 Surlyn®</b> marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, lines 36-38.)  <b><u>DuPont Surlyn Product Information:</u></b> <sup>18</sup> Surlyn® 8940 (formerly 1605 (see '156 patent, col. 2, lines 46-48)) has a Shore D hardness of 65. (See Exhibit I.)
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	Surlyn® 1605 is a low acid ionomeric resin.  <b><u>Per the '156 Patent:</u></b> "Type 1605 Surlyn® (Surlyn® 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin..." ('156 patent, col. 2, lines 46-51.) Methacrylic acid is an alpha, beta-unsaturated carboxylic acid.
and having a modulus of from about 15,000 to about 70,000 psi; and	Surlyn® 1605 inherently exhibits the claimed modulus.  "Type 1605 Surlyn (Surlyn 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin having a <b>flexural modulus of about 51,000 psi.</b> " ('156 patent, col. 2, lines 48-51; see also Surlyn® Product Information, Exhibit I.)
an outer cover layer disposed about said inner cover layer,	"An <b>outer layer, ply, lamination or cover 16</b> ... is then <b>remolded onto the inner ply or layer 14....</b> " (Nesbitt, col. 2,

<sup>18</sup> Attached as Exhibit I.

<b>Claim 8</b>	<b>Nesbitt</b>
	lines 43-47.)
said outer cover layer having a thickness of from about 0.01 to about 0.07 inches,	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as Surlyn type 1855, may be in the range of 0.020 inches and 0.100 inches." (Nesbitt, col. 3, lines 22-25.)
and comprising a polyurethane material.	<u>Molitor '637</u> : Estane 58133 is a polyurethane material. (Molitor '637, col. 18.)

Therefore, Nesbitt anticipates claim 8 because (1) Nesbitt incorporates the relatively soft Estane 58133 polyurethane of Molitor '637 and (2) the Estane 58133 polyurethane material inherently has a Shore D hardness of 55, well within the claimed range. See M.P.E.P. §§ 2163.07 (incorporation by reference permitted); 2131.01 (multiple reference § 102 rejection appropriate when showing an aspect of a primary reference is inherent).

Additionally, the alleged invention recited in claim 5 would have been obvious to those skilled in the art at the time of the alleged invention. For example, Nesbitt provides express motivation to incorporate the soft polyurethane material disclosed in Molitor '637 as the soft outer cover layer by its specific reference to the Molitor '637's "polymeric materials." (Nesbitt, col. 3, lines 51-61.)

Moreover, as recognized by the inventor of the '156 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves. (Exhibit G at 334.) In the primary example taught by Nesbitt, the outer cover layer was made of Surlyn® 1855 (now Surlyn® 9020). This material had a flexural modulus of about 14,000 psi and a Shore D hardness of 55. (See Exhibit I.) The Estane 58133 thermoplastic polyurethane taught by Molitor '637 is likewise a relatively soft, low modulus material. For example, the Estane 58133 polyurethane has a flexural modulus of 25,000 psi and a Shore D hardness of 55. (See Exhibit J.) Thus, the ordinarily skilled golf ball designer would have readily appreciated the substitutability of Nesbitt's Surlyn® 1855 and Molitor '637's Estane 58133.

Prior to the alleged invention, polyurethane was known to have a number of advantageous properties for use in golf ball outer cover layers. (See, e.g., GB '196, col. 1, lines 38-44; *supra* IV.C.1.) Therefore, it would also have been obvious to modify the outer cover layer of Nesbitt to include the relatively soft Estane 58133 polyurethane taught in Molitor '637 because polyurethane was a well-known substitute to ionomer resins as a golf ball cover material and provided numerous advantages over ionomer resin covers.

Accordingly, Nesbitt teaches every limitation of claim 8 and thereby anticipates claim 8 under 35 U.S.C. § 102(b) and/or renders claim 8 obvious under 35 U.S.C. § 103(a) when taken in view of Molitor '637. Therefore, Nesbitt and its incorporation of Molitor '637 raise substantial new questions of patentability with respect to claim 8 that were not previously considered by the PTO. Therefore, reexamination of claim 8 of the '156 patent is proper.

## 2. Claim 8 is Obvious Over Nesbitt in View of Wu

While Nesbitt discloses a particular soft, low modulus polyurethane material (i.e., Estane 58133) for use as a golf ball cover, it would have been obvious to use the polyurethane taught by Wu as a golf ball cover at the time of the alleged invention. Nesbitt teaches a multi-layer golf ball having an outer cover layer made of a soft polymeric material, such as, for example, Molitor '637's soft polyurethane material.

Wu teaches that:

*The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.*

*It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls,*

*polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.*

(Wu at col. 1, lines 36-46 (emphasis added).) Therefore, it would have been obvious to modify the golf ball disclosed in Nesbitt to include an outer cover made of Wu's soft polyurethane material because it would exhibit an improved cut resistance over Surlyn or balata cover layers while providing a golf ball having the "click" and "feel" of a balata-covered ball. This rationale was adopted by the BPAI in a related application in affirming an Examiner's rejection of a similar claim. The BPAI held:

In applying the test for obviousness<sup>6</sup> we conclude that the teachings of Wu clearly would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to achieve the expected benefits therefrom taught by Wu (i.e., to have the "click" and "feel" of balata; improved shear resistance and cut resistance; durability; and resiliency). Thus, it would have been obvious to one skilled in the art to have modified Nesbitt's three-piece golf ball having a spherical core, an inner layer of type 1605 Surlyn® and an outer layer of type 1855 Surlyn® by replacing the type 1855 Surlyn® in the outer layer with polyurethane as suggested and taught by Wu.

(*Ex Parte Sullivan*, PTO Bd. Of Patent App. & Int. at 11, Jan. 30, 2004 (decision in U.S. Patent Application Serial No. 08/873,594) (**Exhibit K**).)

Moreover, as recognized by the inventor himself, the particular materials used in the golf balls were not as important as the mechanical properties of those layers. (See **Exhibit G** at 334.) The Surlyn® 1855 (now Surlyn® 9020) taught in Nesbitt's primary example has a Shore D hardness of 55 and a flexural modulus of about 14,000 psi. (**Exhibit I**.) Wu's polyurethane material has a Shore D hardness of 58 as measured on the surface of the golf ball. (**Exhibit C** (showing that the polyurethane material used as the outer cover layer on the Titleist Professional™ golf ball has a Shore D hardness of 58); see Decl. of Jeffrey L. Dalton at ¶ 6.) In addition to being soft, Wu's polyurethane is a relatively low flexural modulus material. For

example, this material has a flexural modulus of about 23,000 psi when measured in accordance with ASTM standards. (Decl. of Jeffrey L. Dalton at ¶ 7.) This is very similar to the hardness of the Surlyn® 1855 used in one example taught by Nesbitt. Thus, those skilled in the art would have been led to substitute the polyurethane of Wu for the soft ionomer cover layer of Nesbitt because such would give the same or improved playability properties and would improve durability properties of the resulting golf balls.

Therefore, it would have been obvious to modify the golf ball of Nesbitt to include an outer cover layer using the polyurethane disclosed by Wu because it provides a golf ball having a good “click” and “feel” and exhibits improved shear resistance and cut resistance when compared to balata-covered balls.

Therefore, claim 8 is also obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Wu. These references raise substantial new questions of patentability that were not previously considered by the PTO. Therefore, reexamination of claim 8 of the '156 patent is proper.

### 3. Claim 8 is Obvious Over Nesbitt in View of Molitor '751

In addition to being anticipated by Nesbitt, claim 8 is also obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Molitor '751. While Nesbitt describes an outer cover layer including a soft polyurethane material (i.e., the Estane 58133 of Molitor '637), it would have been obvious to include the relatively soft outer cover layer taught by Molitor '751, which includes a polyurethane-based material as the outer cover layer of the Nesbitt golf ball for the reasons provided by Molitor '751.

Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a



**thermoplastic urethane** having a shore A hardness less than 95  
and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 explains that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also **includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls having non-wound cores.**

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Molitor '751 explains that the advantages of using this cover on a two-piece golf ball, such as the golf ball of Nesbitt, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover material as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19, **Exhibit L.**) Therefore, Molitor '751's cover material having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft outer cover layer of Nesbitt and replace it with an outer cover made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that exhibits "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls,



and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Nesbitt when taken in view of Molitor '751 renders claim 8 obvious under 35 U.S.C. § 103(a). Thus, these references raise substantial new questions of patentability that were not previously considered by the PTO. Therefore, reexamination of claim 8 of the '156 patent is proper.

**4. Claim 8 is Obvious Over Proudfit in View of Molitor '637**

Proudfit discloses a three-piece solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata or balata-based material. (Proudfit, Abstract; col. 5, lines 43-52.) Proudfit teaches that: "A number of golfers, primarily professional and low handicap golfers, prefer balata covered balls because of the higher spin rate, control, "feel," and "click" which balata provides." (Proudfit, col. 1, lines 49-52.) While Proudfit may not disclose the use of a polyurethane outer cover, it would have been obvious to modify Proudfit to include an outer cover made of polyurethane rather than the balata material disclosed therein because Proudfit seeks to solve the same problems associated with Surlyn-covered golf balls that polyurethane had been used to solve for years. Moreover, polyurethane has advantages over both balata- and Surlyn-covered golf balls as would have been readily appreciated by those skilled in the art prior to the critical date.

Proudfit's teachings are illustrated in the following claim chart:

<b>Claim 8</b>	<b>Proudfit</b>
A golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a core:	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a

<b>Claim 8</b>	<b>Proudfit</b>										
	<p>relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)</p> <p>"Two specific <b>solid core compositions</b> used with the new two-layer cover had the composition described in Table 1. <b>One core</b> was used in a golf ball which was designated as a 90 compression ball, and <b>the other core</b> was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)</p>										
an inner cover layer disposed on said core,	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively <b>hard inner layer 13</b> of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)</p>										
said inner cover layer having a Shore D hardness of about 60 or more,	<p>"The composition of the inner cover layer is described in Table 6."</p> <table border="1"> <tr> <th colspan="2">TABLE 6</th></tr> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <p>(col. 8, lines 22-30.)</p> <p>Surlyn® 8940 has a Shore D hardness of 65; Surlyn® 9910 has a Shore D hardness of 64 (<b>Exhibit I</b>.) Therefore, this cover blend has a hardness of 60 or more. (See Decl. of Edmund A. Hebert at ¶¶ 8-9.)</p>	TABLE 6		Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
TABLE 6											
Composition of Inner Layer of Cover (Parts by Weight)											
Ionomer Type	Blend Ratio										
Sodium- Surlyn 8940	75%										
Zinc- Surlyn 9910	25%										
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p>"The composition of the inner cover layer is described in Table 6."</p> <table border="1"> <tr> <th colspan="2">TABLE 6</th></tr> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <p>(col. 8, lines 22-30.)</p> <p>Surlyn® 8940 and Surlyn® 9910 are both low acid ionomer resins containing no more than 16% by weight of</p>	TABLE 6		Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
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Composition of Inner Layer of Cover (Parts by Weight)											
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Sodium- Surlyn 8940	75%										
Zinc- Surlyn 9910	25%										

Claim 8	Proudfit
	an alpha, beta-unsaturated carboxylic acid.
and having a modulus of from about 15,000 to about 70,000 psi; and	The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1.)
an outer cover layer disposed about said inner cover layer,	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.)
said outer cover layer having a thickness of from about 0.01 to about 0.07 inches,	"The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (col. 7, lines 40-46.)
and comprising a polyurethane material.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.)

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material, it would have been obvious given that "[t]he patent literature is replete with proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane...." (Molitor '751, col. 2, lines 9-12.) Soft polyurethane materials had been known to be a substitute for balata covers for decades prior to the filing of the '156 patent.

For example, Molitor '637 discloses the use of polyurethane material as a soft polymeric material that may be used as an outer cover layer of a golf ball. (See Molitor '637, col. 5, lines 33-41; col. 18, Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material includes Estane 58133.

As was readily appreciated by those skilled in the art—including the inventor of the '156 patent—the types of materials used in a golf ball are not as critical to a golf ball's playability as are the mechanical properties of those materials. (See Exhibit G at 334.) The Estane 58133 is a relatively soft material and has a Shore D hardness of 55 and is also a low flexural modulus material having a modulus of about 25,000 psi. (See Exhibit J.) Proudfit's outer cover layer is

also relatively soft and has a flexural modulus between 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Due to the similarities between these two materials, the ordinarily skilled artisan would have recognized the substitutability of these two materials as well as the benefits of using polyurethane as an outer cover material.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the Estane polyurethane outer cover layer material of Molitor '637 because such was a well known substitute to balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability when compared to balata; (3) cost-effectiveness when compared to balata; and (4) having a good "click" and "feel." (See *supra* Part IV.C.1.) All of this would have led one of ordinary skill in the art to replace the soft balata outer cover layer of Proudfit with the soft polyurethane outer cover layer of Molitor '637 at the time of the alleged invention.

Therefore, Proudfit when taken in view of Molitor '637 renders claim 8 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 8 of the '156 patent is proper.

#### **5. Claim 8 is Obvious Over Proudfit in View of Wu**

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer of a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the soft balata outer cover layer of Proudfit to include the soft polyurethane material taught by Wu.

Wu teaches that:

*The problem with SURLYN®-covered golf balls, however, is that they lack the “click” and “feel” which golfers had become accustomed to with balata. “Click” is the sound when the ball is hit by a golf club and “feel” is the overall sensation imparted to the golfer when the ball is hit.*

*It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the “click” and “feel” of balata.*

(Wu at col. 1, lines 36-46 (emphasis added).)

As the inventor of the '156 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (Exhibit G at 334.) Additionally, Wu's polyurethane material inherently has a flexural modulus of about 23,000 psi measured in accordance with ASTM standards. (Decl. of Jeffrey L. Dalton at ¶ 7.) Proudfit's outer cover layer material has a flexural modulus of between about 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Thus, one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

Based on Wu's teachings, one of ordinary skill in the art would have recognized the substitutability of soft polyurethane for soft balata-based materials and the advantages of making such a substitution. These advantages include (1) low price compared to balata; (2) better cut resistance when compared to balata; and (3) a “click” and “feel” that is similar to balata. Moreover, the replacing the balata-material taught by Proudfit would have been obvious to those skilled in the art prior to November 9, 1995 because before that time, the Titleist Professional™ golf ball, which had used Wu's polyurethane material, had replaced balata-covered balls as the market leader. (See Exhibit C; see also Decl. of Jeffrey L. Dalton at ¶¶ 3-4.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with an outer cover layer made of soft polyurethane material because polyurethane provides numerous advantages over balata while exhibiting the "click" and "feel" of balata.

Therefore, Proudfit when taken in view of Wu renders claim 8 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously decided by the PTO, reexamination of claim 8 of the '156 patent is proper.

**6. Claim 8 is Obvious Over Proudfit in View of Molitor '751**

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with the soft polyurethane outer cover layer taught by Molitor '751.

Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a **cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a **thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, the Molitor '751 patent explains that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also **includes balls having a solid layer beneath the cover as disclosed, for**



example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls having non-wound cores.

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover layer including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover material as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (**Exhibit L**.) A cover material having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with the soft outer cover layer including a soft polyurethane material as taught by Molitor '751 to provide golf balls that have "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Proudfit when taken in view of the teachings of Molitor '751 render claim 8 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously decided by the PTO, reexamination of claim 8 of the '156 patent is proper.



**I. Claim 9**

Claim 9 of the '156 patent depends directly from claim 8 and further limits the outer cover layer to an outer cover layer having a Shore D hardness of 64 or less. No such golf ball was or is patentable as shown by the application of the following references to the claim.

**1. Nesbitt Anticipates Claim 9**

Nesbitt teaches each and every limitation of claim 9 as shown by the following claim

chart:

<b>Claim 9</b>	<b>Nesbitt</b>
The golf ball of claim 8	See above, Sections VI.H.1 to VI.H.3.
wherein said outer cover exhibits a Shore D hardness of about 64 or less.	<p><b><u>Nesbitt:</u></b> Nesbitt teaches an outer cover layer made of Surlyn® 1855 (now Surlyn® 9020) that has a <b>Shore D hardness of 55.</b><sup>19</sup></p> <p><b><u>Nesbitt Incorporates the Materials of Molitor '637 by Reference:</u></b></p> <p>"Reference is made to the application Ser. No. 155,658 of <b>Robert P. Molitor</b> issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, lines 54-60.)</p> <p><b><u>Molitor '637:</u></b> Teaches the use of <b>Estane 58133</b> in Examples 16 and 17. (Molitor '637, col. 18.) Estane is a soft polyurethane material that inherently has a <b>Shore D hardness of 55.</b><sup>20</sup></p>

Therefore, Nesbitt anticipates claim 9 under 35 U.S.C. § 102(b). Alternatively, claim 9 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

<sup>19</sup> See Exhibit I

<sup>20</sup> See Exhibit J (Estane 58133 product specification sheet).

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 9 invalid under 35 USC §§ 102(b), 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 9 that were not previously considered by the PTO. Therefore, reexamination of claim 9 of the '156 patent is proper.

## 2. Proudfit When Taken in View of Other References Renders Claim 9 Obvious

Proudfit teaches a golf ball having a cover hardness within the scope of the claimed range. Proudfit's teaches are illustrated by the following claim chart:

Claim 9	Proudfit
The golf ball of claim 8	See Sections VI.H.4 to VI.H.6.
wherein said outer cover exhibits a Shore D hardness of about 64 or less.	"... an <b>outer layer of soft material</b> such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) This material inherently has a Shore D hardness of less than 64.

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 raise substantial new questions of patentability with respect to claim 2 that were not previously considered by the PTO. Therefore, reexamination of claim 2 of the '156 patent is proper.

## J. Claim 10

Claim 10 depends directly from claim 8. Claim 10 limits the outer cover layer thickness to be between 0.01 and 0.05 inches. Golf balls having outer cover layers as claimed were known in the art prior to the critical date and therefore, no such golf ball was or is patentable.

### 1. Nesbitt Anticipates Claim 10

Nesbitt teaches each element of claim 10 as shown by the following claim chart:

<b>Claim 10</b>	<b>Nesbitt</b>
The golf ball of claim 8	See above, Section VI.H.1 to VI.H.3.
wherein said outer cover layer has a thickness of from about 0.01 to about 0.05 inches.	"The <b>thickness of the outer layer or cover 16</b> of soft, low flexural modulus resin such as Surllyn type 1855, <b>may be in the range of 0.020 inches and 0.100 inches.</b> " (col. 3, lines 22-25.)

Therefore, Nesbitt anticipates claim 10 under 35 U.S.C. § 102(b). Alternatively, claim 10 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 10 invalid under 35 USC §§ 102(b), 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 10 that were not previously considered by the PTO. Therefore, reexamination of claim 10 of the '156 patent is proper.

## 2. Proudfit in Combination with Other References Teach All of the Limitations of Claim 10

Proudfit teaches each element of claim 10 as shown by the following claim chart:

<b>Claim 10</b>	<b>Proudfit</b>
The golf ball of claim 8	See above, Section VI.H.4 to VI.H.6.
wherein said outer cover layer has a thickness of from about 0.01 to about 0.05 inches.	"The <b>thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch</b> to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an <b>outer layer thickness of 0.0525 inch....</b> " (col. 7, lines 40-46.)

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 10 obvious under 35 U.S.C. § 103(a). Therefore, these references raise substantial new

questions of patentability that were not previously considered by the PTO. Therefore, reexamination of claim 10 of the '156 patent is proper.

**K. Claim 11**

Claim 11 depends directly from claim 8. Claim 11 further limits the thickness of the outer cover layer to be between 0.03 and 0.06 inches. Golf balls having outer cover layers as claimed were known in the art prior to the critical date and therefore, no such golf ball was or is patentable.

**1. Nesbitt Anticipates Claim 11**

Nesbitt teaches each and every limitation of claim 11 as shown by the following claim chart:

<b>Claim 11</b>	<b>Nesbitt</b>
The golf ball of claim 8 wherein said outer cover layer has a thickness of from about 0.03 to about 0.06 inches.	See above, Sections VI.H.1 to VI.H.3.  "The <b>thickness of the outer layer or cover 16</b> of soft, low flexural modulus resin such as Surlyn type 1855, <b>may be in the range of 0.020 inches and 0.100 inches.</b> " (col. 3, lines 22-25.)  "The <b>outer layer of the soft resin is of a thickness of 0.0575 inches.</b> " (Nesbitt, col. 3, lines 39-40.)

Therefore, Nesbitt anticipates claim 11 under 35 U.S.C. § 102(b). Alternatively, claim 10 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 11 invalid under 35 USC §§ 102(b), 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 11

that were not previously considered by the PTO. Therefore, reexamination of claim 11 of the '156 patent is proper.

**2. Proudfit in Combination with Other References Teach All of the Limitations of Claim 10**

Proudfit teaches each element of claim 10 as shown by the following claim chart:

Claim 11	Proudfit
The golf ball of claim 8	See above, Section VI.H.4 to VI.H.6.
wherein said outer cover layer has a thickness of from about 0.03 to about 0.06 inches.	"The <b>thickness of the outer layer</b> can be within the range of about <b>0.0450 to 0.0650 inch</b> to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an <b>outer layer thickness of 0.0525 inch....</b> " (col. 7, lines 40-46.)

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 11 obvious under 35 U.S.C. § 103(a). Therefore, these references raise substantial new questions of patentability that were not previously considered by the PTO. Therefore, reexamination of claim 11 of the '156 patent is proper.

**VII. CONCLUSION**

For the above reasons, it is submitted that reexamination of claims 1-11 of the '156 patent is appropriate in light of the newly cited prior art printed publications.

Respectfully submitted,

Dated: 1/13/06



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# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No.: 6,503,156

Inventor: Michael J. SULLIVAN

Issued: January 7, 2003

Appl. 09/873,642

Filed: June 4, 2001

Titled: **GOLF BALL HAVING MULTI-LAYER  
COVER WITH UNIQUE OUTER  
COVER CHARACTERISTICS**

**REQUEST FOR REEXAMINATION  
UNDER 35 U.S.C. §§ 301-307, 314 AND  
37 C.F.R. §§1.913-1.914**

## BOX REEXAM

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

## CERTIFICATION UNDER 37 C.F.R. § 1.915(b)(6)

Sir:

In accordance with the requirements of 37 C.F.R. § 1.915(b)(6) Third Party Requestor Acushnet Company ("Acushnet") hereby certifies that service of the accompanying Request for *Inter partes* Reexamination of United States Patent No. 6,503,156 was made by U.S. Express Mail on January 17, 2006 to the following correspondence address provided pursuant to 37 C.F.R. § 1.33(c):

The Top-Flite Golf Company, A Wholly Owned  
Subsidiary of Callaway Golf Company  
2180 Rutherford Road  
Legal Dept.  
Carlsbad CA 92008-7328

Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 08-3038 referencing docket number 00634.0004.RXUS04.

Dated: 1/16/06

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Respectfully submitted,



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